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ABSTRACT

These six conference papers from the Biennial Conference on Postsecondary Education for Persons who are Deaf or Hard of Hearing focus on serving nontraditional students with deafness or hard of hearing. The first paper, "Helping Minority Individuals Navigate through Successful School and Work Transitions" (Glenn B. Anderson and Susan K. McGee), provides an overview of demographic changes occurring among elementary and secondary students who are deaf or hard of hearing, and presents data on the post high school transition experiences of a sample of minority deaf and hard of hearing youth. Data from another study on the career preparation, entry, and advancement experiences of minority individuals in professional and technical jobs are also reported. The second paper, "Services for Students Who Are Hard of Hearing" (Pamela J. Belknap), discusses the specific needs of students who are hard of hearing. Other papers include: "Traditionally Underserved Deaf Adults: Triumph or Tragedy?" (Mario P. Insabella and Steve Glenn); "Tools for Language: Rehab 101 and Cultural Diversity" (Jesse Gates); "Adjusting to Hearing Loss: The Trials and Tribulations of a Deafened Adult" (Steve Larew); and "Academically Gifted Deaf Students Attending Regular Four-Year Colleges and Universities" (Robert S. Menchel). (Some papers contain references.) (CR)

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Focusing on Non-Traditional and Underserved Students

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Challenge of Change: Beyond the Horizon

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EC 305953

Helping Minority Individuals Navigate Through Successful School and Work Transitions

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As the 21st century nears, three major challenges confront postsecondary education and rehabilitation programs:

1. How to provide the best services possible during a time of diminishing resources, especially financial resources.
2. How to best meet the educational and training needs of a changing population of deaf and hard of hearing individuals.
3. How to best respond to the changing demands of the workplace for workers with the skills to compete in an increasingly diverse and global economy.

We will focus on the last two challenges. The first challenge is more complex and cannot be addressed within the scope of this paper.

We begin with a general overview of some of the significant demographic changes occurring among elementary and secondary students who are deaf or hard of hearing. Some significant implications for postsecondary education and rehabilitation programs are also highlighted. The primary sources of information on demographic changes are the most recently available reports from the Annual Survey of Deaf and Hard of Hearing Children and Youth (Schildroth & Hotto, 1995; Allen, 1994).

Following the overview on demographic changes among elementary and secondary students, we present information from our own research at the University of Arkansas. The data are from two national projects -- one on the post high school transition experiences of a sample of minority deaf and hard of hearing youth -- and the second on the career preparation, entry, and advancement experiences of minority individuals in professional and technical jobs.

DEMOGRAPHIC CHANGES BETWEEN REPORTING PERIODS 1973-74 AND 1993-94

The demographic characteristics of students enrolled in educational programs serving children and youth who are deaf or hard of hearing have changed significantly over the past 20 years. The most dramatic demographic changes noted in the Annual Survey of Deaf and Hard of Hearing Children and Youth are those related to race and/or ethnic background. Two notable trends include:

- a decrease in the percentage of white student enrollments from 76% to 60%, and

- an increase in the percentage of minority student enrollment from 24% to 40% (see Figure 1).

When the demographic changes among minority students were further examined, significant increases were noted among two major groups of students. The most significant changes in percentage of minority student enrollment were found among:

- Hispanic students (enrollments increased from 7% to 16%), and
- Asian/Pacific Islander students (enrollments increased from less than 1% to more than 4%).

Significant Geographical Indicators for 1993-94

The four geographical regions designated by the U.S. Census Bureau are used by the Annual Survey of Deaf and Hard of Hearing Children and Youth to report student geographical distributions (e.g., North, East, South, and West). In this section, data are summarized and reported for students attending educational programs for deaf or hard of hearing students during the 1993-94 school year.

When the data were examined on a region by region basis, the South was the only region that reported more than one-half of all deaf or hard of hearing students enrolled were from racial or ethnic minority backgrounds. Of the minority students attending schools in the South, most were African-American. Furthermore, when data were examined by individual states within each of the four geographical regions, several states, particularly those in the South, Southwest, and West, reported higher enrollments of minority students compared to white students.

The implications are that in many states, especially those in the South, Southwest, and West, minority students are becoming the "new majority" in educational programs serving deaf or hard of hearing students. Listed below is a summary of some of the significant demographic trends indicated by regional and state geographical distributions.

Black students:

- 57% of Black students were enrolled in educational programs in the South.

Hispanic students:

- 18 states reported higher enrollments of Hispanic than Black students in their educational programs.
- Two-thirds of all Hispanic students reported to the Annual Survey were attending educational programs in three states, California, Texas, and New York.

Asian/Pacific Islander students:

- One-third of Asian/Pacific Islander students were enrolled in educational programs in California.
- In five states, Asian/Pacific Islander students outnumbered both Black and Hispanic students.

Enrollment by Type of Educational Program for 1993-94

Four major types of educational settings are reported by the Annual Survey. They include residential schools, day schools, local non-integrated classrooms, and local integrated classrooms. Significant demographic trends can also be noted in the extent of minority student enrollment within these four educational settings. Most white students are enrolled in residential schools and local integrated programs. On the other hand, most minority students attend day school programs (see Figure 2). Some reasons for the differences in educational placement are presented below.

Cohen, Fischgrund, and Redding (1990) identified two possible factors for the differences in educational placement between white students and minority students. One factor is that most day school programs, compared to residential schools, are located in large urban centers which tend to have high proportions of minority residents. A second factor is that educational placements in either local, integrated or non-integrated settings are often made on the basis of student academic achievement levels. In general, minority students have not performed as well on standardized achievement tests as their white peers (Allen, 1994). Thus, when academic achievement levels are considered for educational placements, minority students are more likely to be placed in local, non-integrated classes than their white peers.

Listed below is a summary of some of the key demographic trends by racial or ethnic background and type of educational setting.

Residential schools

- The racial/ethnic backgrounds of students attending residential schools were predominately white (65%) compared to minority students (35%); and
- Significantly more Black students (20%) than Hispanic students (10%) were attending residential schools.

Local, integrated programs and local, non-integrated programs

- The racial/ethnic backgrounds of students attending local, integrated (e.g., mainstream) educational programs were predominately white (62%) compared to minority students (38%); and
- Minority and white students were equally represented (e.g., 50-50) in local, non-integrated or self-contained educational programs.

Day schools

- The racial/ethnic backgrounds of students attending day schools were predominately minority (57%) compared to white students (43%).

Exit Outcomes for School Leavers Age 14 and Over by Race/Ethnic Background for 1993-94

Overall, 66% of the school leavers reported to the Annual Survey during 1993-94 completed high school with a diploma while 22% completed high school with a certificate. Twelve percent (12%) dropped out (see Figure 3). When graduation with a diploma or certificate were examined on the basis of selected student demographic characteristics (e.g., race or ethnic background, gender, and having one or more additional disabilities), the following trends were noted:

- students who graduated with a diploma were predominately white (65%) compared to minority students (35%);
- more males received diplomas than females; and
- more deaf students without additional disabilities received diplomas than those who had additional disabilities.

On the other hand, students who graduated with a certificate were predominately minority (55%) compared to white students (45%). Graduation with a certificate was more prevalent in the South than any other region (e.g., East, West, and North). Sixty-six percent (66%) of those graduating with a certificate were from educational programs in the South.

Since a high school diploma is generally required for enrollment in most postsecondary programs, this trend has important implications for students from the South who wish to enroll in 2-year or 4-year colleges. Also, in today's job market, high school diplomas and, often, post high school vocational training certificates have become the minimum required to qualify for many entry-level jobs.

For example, Crane (1994) reported that the Department of Labor has projected that by the year 2000 and beyond, almost all jobs will require at least one year of college training. Crane (1994) also cites other reports which project at least two years of college training will be needed. Regardless of how many years of education beyond high school are needed, it is clear that post high school education and training have become the minimum credentials necessary for anyone who wants to get a good job, earn good pay, and have opportunities for promotions and job advancement. Furthermore, as the demands of the workplace continue to change, more workers are expected to pursue both ongoing training to upgrade their skills and retraining to learn new skills to stay competitive in the workplace.

In the next section, we provide a summary of some of the key findings from our research on the post high school transition experiences of minority deaf and hard of hearing youth.

RESEARCH ON THE POST HIGH SCHOOL ASPIRATIONS AND TRANSITION EXPERIENCES OF MINORITY DEAF AND HARD OF HEARING HIGH SCHOOL STUDENTS

Purpose and Method

Although there have been significant increases in the enrollment of minority students who are deaf or hard of hearing in educational programs, research on their school to postsecondary training and/or work experiences has yet to be reported in professional literature. In an effort to respond to this need, our research was organized around the following questions:

- What are their post high school goals?
- Who are their role models and who did they perceive were their key supporters?

- What postsecondary activity were they involved in one to two years after leaving high school, and what further goals did they hope to attain?

The initial method of data collection for this study varied significantly from previous research on the school to work transition of students who were deaf or hard of hearing (e.g., Allen, Schildroth, & Rawlings, 1989; El-Khiami, 1989; Bullis *et al*, 1990; Wagner, 1991). In contrast to earlier research on school to work transition, this study focused primarily on respondents who were members of racial or ethnic minority groups. A second difference was associated with the methods of data collection. During the first phase of the study, the data were not collected with a written survey or through proxies such as parents of program personnel. Instead, the data were collected through face to face interviews with students on their school campuses. The researcher who conducted the interviews is both deaf and a member of a racial/ethnic minority group. One hundred and one (101) students were initially interviewed on six different school campuses in six different states.

At the time of the interview, the participating students supplied the researcher with phone numbers and addresses where they could be reached for follow-up data collection. Using these addresses and help from the schools, 74 students were traced. Of these 74 students who received follow-up questionnaires, 46 respondents (62%) returned completed usable questionnaires. Several students had warm personal comments for the researcher who had interviewed them, indicating the importance of the initial face-to-face contact.

Sample

The 46 respondents were compared with the original 101 interviewees. No significant differences were found between the groups in the areas of race or ethnicity, school attended, gender, or future goals. There were slightly more male students (52%) in the follow-up sample than female students (48%). They were also predominately African American (44%) or Hispanic (46%) with a small percentage of Asian students (4%) and Others (6%).

Included in the sample were a significant number of students who had moved to the United States from other countries. Thirty-five percent (35%) of the students were foreign-born, which does not vary significantly by race or ethnicity. The youngest arrived in the United States at the age of 2, the most recent arrived at 19. The mean age of arrival for the students who were born outside of the United States was 11 years old.

The first interview was conducted during the Spring of 1993 or 1994. Students, who were all seniors in high school, ranged in age from 17-21, with a mean age of 19. This is consistent with Allen's findings (1994) that school leavers who are deaf and members of racial or ethnic minority groups tend to be older than those who are white. The follow-up survey was conducted 1 to 2 years after the initial face to face interviews. Students were 19-24 years of age, with a mean age of 21. These students were in the initial phases (e.g., first one or two years) of their postsecondary activities.

Students' Key Supporters During High School When Planning For Their Futures

As students plan and make decisions about their future goals, the quality of help and encouragement they receive from significant others in their home and school environments helps shape the kinds of decisions they make (Anderson & Grace, 1991). More students indicated they received "a lot" of encouragement from their high school counselors than from any other individual. When the categories of "a lot" and "some" encouragement were combined, Mother was the most often cited as encouragement provider. Father was indicated most often as providing no encouragement at all, and that is for those students who had discussed their future goals with their father. Finally, after fathers, vocational rehabilitation (VR) counselors were second leading category of significant others identified by the students as least likely to provide them with a lot of encouragement regarding their future goals or plans.

Initial Contacts with Vocational Rehabilitation

For most students who are deaf or hard of hearing, early contact with vocational rehabilitation (VR) counselors during their high school years is essential for developing plans for post high school transitions to postsecondary training and/or work (Allen, Schildroth, & Rawlings, 1989). It was apparent, however, that a significant number of the minority students participating in this study did not have either early or extensive contact with a local VR counselor.

Seventy-six percent of the students who participated in this study had been in contact with VR at the time of their initial interviews. Of those who had contact with VR, 82 percent had their initial contact during 12th grade, 12 percent in 11th grade, and less than six percent of the students had had any contact with VR prior to 11th grade. Many of the students contacted in 12th grade had yet to initiate any actual working relationship to discuss future goals or post high school plans.

Of the students who had actually worked with a VR counselor, 49 percent discussed their Individualized Written Rehabilitation Plan (IWRP). Thirty-three percent received help planning for postsecondary training, and 21 percent received assistance related to planning for and seeking employment after high school.

Respondents' Role Models

In addition to the help received from VR counselors and perceptions of encouragement or support received from significant others in their home and school environments, students were asked in their initial interviews to identify their role models. Popular figures or celebrities such as singers, actors, or sports figures were identified most frequently by the students as their role models. These were people outside of their everyday lives and experiences that the students, like most adolescents in general, are exposed to on a regular basis through the media or other related communications mediums.

The second category the students identified as their role models were one or both parents. School personnel were the third most frequently identified sources of role models. They ranged from teachers, both deaf and hearing, to school support staff such as dormitory counselors, janitors, and coaches. The fourth group included former schoolmates who had gone on to postsecondary institutions or other admirable pursuits after leaving high school. It was also noted that a significant number of students were not able to identify individuals that they admired or considered to be their role models.

Students' Post High School Goals at Initial Interview

When asked what their plans were once they completed high school, 80% of the students indicated they planned to pursue postsecondary education. Fifteen percent (15%) indicated they would look for work, and 4% either didn't know or were planning to pursue both school and work activities. Some of the specific jobs or careers the students aspired to included:

- Director of a Social Service Agency,
- Lawyer,
- Teacher of the Deaf,
- Actor,
- Entrepreneur - own a business,
- Lab Technician (medical), and
- Career in the Medical Profession (medical research).

These types of jobs are also indicative that many of the students have high aspirations for themselves. Furthermore, employment in many of these jobs necessitate that the students attend and complete postsecondary education programs.

Factors That Influence Student Selection of a Postsecondary Program

Students indicated a variety of reasons for choosing a particular postsecondary program to attend. The largest percentage of students (39%) indicated they chose a particular postsecondary program because it offered the field of study or major of interest to them. Secondly, 36% of the students indicated they chose a program because they felt it was the type of program and school environment in which they would feel comfortable and accepted by teachers and students. Many of the students who indicated this as a reason chose to attend programs with large enrollments of students who are deaf or hard of hearing.

The third factor, indicated by 22% of the respondents, was recommendations from friends and/or former classmate attending the program of interest. A fourth factor, indicated by 19 percent of the respondents, was recommendations from one or both parents. The final factor was recommendations from the high school counselor.

Respondents' Post High School Activities One to Two Years After the Initial Interviews

One to two years after their initial interviews, activities of respondents fell into four categories;

- 61 percent of the respondents were attending school exclusively;
- 13 percent of the respondents were working exclusively;
- 13 percent of the respondents were both working and enrolled in a postsecondary program; and
- 11 percent were job hunting and not enrolled in a postsecondary program.

More than three-fourths of the students who planned to attend a postsecondary program at the initial interview were attending the type of postsecondary program (vocational, 2 or 4 year college) they had indicated they would attend. Over 80 percent of those who intended to enter the job market directly after high school were either working or both working and attending a postsecondary program.

In sum, the implications of the follow-up contacts are that a majority of the students were able to implement their goals and enroll in a postsecondary program or enter the job market.

In the next section, we provide a brief summary of some of the key findings from our national study of minority individuals in professional and technical jobs.

RESEARCH ON FACTORS THAT CONTRIBUTE TO THE SUCCESSFUL ENTRY AND ADVANCEMENT OF MINORITY INDIVIDUALS IN PROFESSIONAL AND TECHNICAL JOBS

As indicated earlier, minority student enrollments in educational programs serving deaf or hard of hearing students have increased significantly during the past 20 years. Furthermore, in some states, minority students are becoming the "new majority" in educational programs serving deaf or hard of hearing students. On the other hand, however, several studies in the literature indicate that significant numbers of minority students have not experienced high rates of success completing postsecondary education programs, entering and advancing in professional and technical jobs compared to their white deaf peers (Andrews & Jordan, 1993; Nash, 1992). Nash (1992) indicated that academic ability was not the dominant factor influencing minority student retention and graduation from a postsecondary program. He suggested that other factors such as those related to environmental supports and those related to one's personal qualities are as important as academic ability.

Through our research on minority individuals in professional and technical jobs, one of our goals was to obtain the respondents' perceptions of the most important factors underlying their success with regard to their education and their jobs. We asked the respondents the following questions:

- What factors contributed to their success in completing their postsecondary education?
- What factors contributed to their successful entry and advancement in a professional or technical job?

Two main groups of respondents were targeted through our research:

- minority persons who were deaf or hard of hearing and employed in professional or technical jobs; and

- minority persons who were hearing and employed in professional or technical jobs serving deaf or hard of hearing persons.

Sample

Before discussing the responses to these questions, a brief demographic profile of the 153 respondents who participated in the study is summarized below:

Hearing status

- 51% were deaf and 49% were hearing

Gender

- 59% were female and 41% were male

Race or ethnic background

- 52% of deaf respondents were African-American
- 64% of hearing respondents were African-American
- 13% of deaf respondents were Hispanic
- 24% of the hearing respondents were Hispanic
- 32% of the deaf respondents were Asian/Pacific Islanders
- 11% of the hearing respondents were Asian/Pacific Islanders

Educational attainments

- 10% had Doctoral degrees
- 40% had Master's degrees
- 34% had Bachelor's degrees
- 16% had Associate degrees or less

Types of Jobs Held by the Respondents

The respondents' job titles can be categorized into five general occupational groups. These occupational groups include service providers, administrators, educators, and those working in a variety of technical jobs (see Figure 4). As indicated in Figure 4, a higher percentage of the hearing respondents compared to deaf respondents were employed as professional service providers (e.g., school counselors, VR counselors, and interpreters) and as educators (e.g., teachers in schools or as college/university faculty). On the other hand, significantly more deaf respondents were employed in technical jobs (e.g., CAD drafters and mechanical engineers).

Respondents' Perceptions of the Most Important Factors Contributing to Success

The top qualities identified by the respondents were as follows:

- positive self-image, attitude, and expression of pride in oneself;

- ability to be persistent and not give up easily;
- skills in self-advocacy and problem-solving;
- adequate educational preparation;
- good communication skills and flexibility in handling oneself in diverse situations;
- motivation--strong desire to succeed;
- ability to establish clear, attainable goals for oneself; and
- access to positive role models.

Concluding Comments

In our study of the post high school transition experiences of deaf students from racial/ethnic minority backgrounds, we noted that over three-fourths of the respondents indicated their post high school goals were to pursue postsecondary education. Most of the jobs and careers that a majority the respondents were seeking require postsecondary training. The extent of postsecondary training required can range from a minimum of a two-year associate degree to an advanced graduate degree, depending on the type of job and the knowledge and skills required. Also, for many minority students, planning and making decisions about post high school plans, successfully navigating through several years of postsecondary training, and making transitions to a career, requires unique types of personal qualities and support systems.

What types of personal qualities and support systems should minority students be aware of that can help make a difference in their efforts to make successful post high school transitions and be prepared for the changing demands of the workplace? Through our study of minority individuals in professional and technical jobs, we sought to identify some of these personal qualities and support systems. These were individuals who had successfully completed undergraduate and/or graduate degrees and were involved in a professional career. The key personal qualities identified by the respondents were those related to adequate educational preparation, persistence in achieving goals, a strong sense of self-pride, and skill in self-advocacy and problem-solving. The main sources of support were the respondents' family members (e.g., parents and siblings) and access to positive models in their educational programs and on the job. In conclusion, while this paper summarizes our preliminary findings, our goal is to provide more detailed summaries of our research in future publications.

Figure 1
Demographic Characteristics of Students who are Deaf or Hard of Hearing Enrolled in Educational Programs

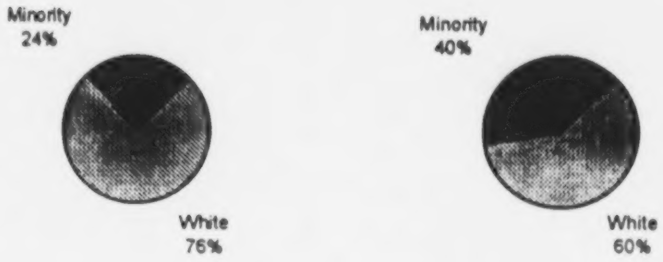


Figure 2
Enrollment of students who are deaf or hard of hearing by race/ethnicity and type of program

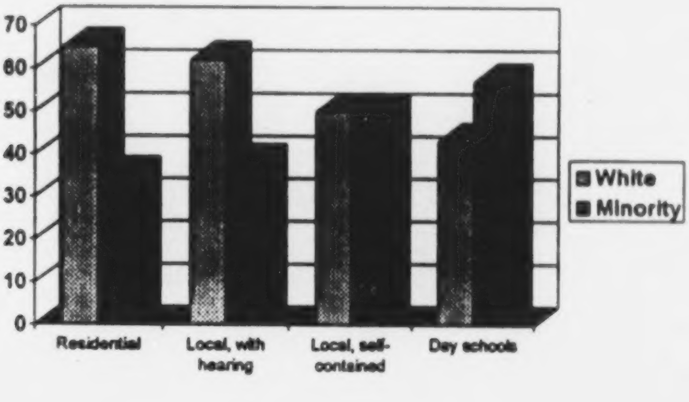
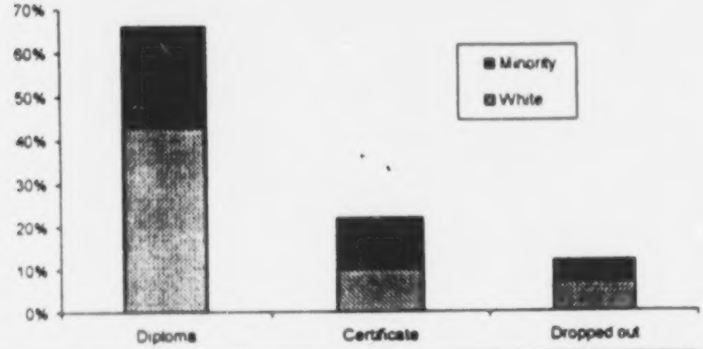


Figure 3

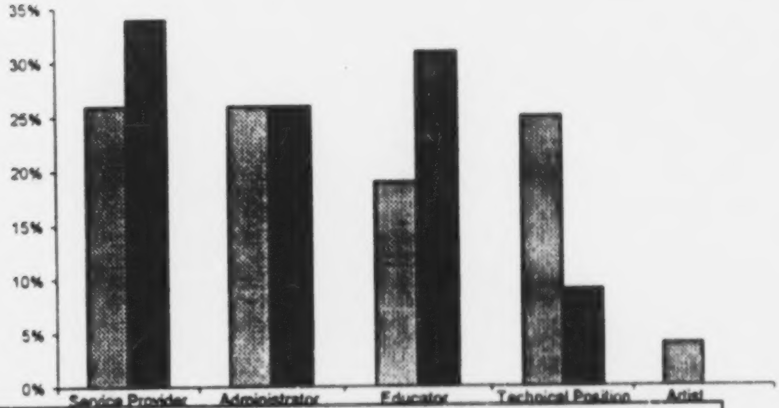
Exit outcomes for school leavers age 14 and over who are deaf or hard of hearing by race/ethnicity for 1993-94



	Diploma	Certificate	Dropped out
Minority	23%	12%	5%
White	43%	10%	7%

Figure 4

Current Jobs of Study Participants by Hearing Status



	Service Provider	Administrator	Educator	Technical Position	Artist
Deaf	26%	26%	19%	25%	4%
Hearing	34%	26%	31%	9%	

References

Allen, T. (1994). Who are the deaf and hard of hearing students leaving high school and entering postsecondary education? Washington, D.C.: Gallaudet University. Paper submitted to Pelavin Research Institute as part of the project, A comprehensive evaluation of the postsecondary educational opportunities for students who are deaf or hard of hearing, funded by U.S. Office of Special Education and Rehabilitative Services.

Allen, T., Rawlings, B., & Schildroth, A. (1989). Deaf students and the school-to-work transition. Baltimore, MD: Paul H. Brookes.

Anderson, G. B. & Grace. C. A. (1991). Black deaf adolescents: A diverse and underserved population. In O. P. Cohen and G. Long (Eds.), Selected Issues in Adolescence & Deafness. The Volta Review, 93(5), 73-86.

Andrews, J. & Jordan, D. (1993). Minority and minority deaf professionals: How many and where are they? American Annals of the Deaf, 138(5), 388-396.

Bullis, M., Bull. B., Johnson, B. Johnson, P., & Kittrell, G. (1990). School-to-community transition experiences of hearing impaired adolescents and young adults in the northwest. Monmouth, OR: Teaching Research Division.

Cohen, O., Fischgrund, J., & Redding, R. (1990). Deaf children from ethnic, linguistic, and racial minority backgrounds: An overview. American Annals of the Deaf, 135(2), 67-73.

Crane, S. (1994). What do I do now?: Making sense of today's changing workplace. Irvine, CA: Vista Press.

El-Khiami, A. (1989). A national study of transition from school to work for deaf youth. Final Report. Little Rock, AR: University of Arkansas Rehabilitation Research and Training Center for Persons who are Deaf or Hard of Hearing.

Nash, K. (1992). The academic experience of minority deaf postsecondary students: A study. In D. H. Ashmore and W. W. Barnes, Jr. (Eds.), Proceedings of the Fifth Biennial Regional Conference on Postsecondary Education for Deaf and Hard of Hearing Persons. Knoxville, TN: University of Tennessee, 69-88.

Schildroth, A. & Hotto, S. (1995). Race and ethnic background in the annual survey of deaf and hard of hearing children and youth. American Annals of the Deaf, 140(2), 96-99.

Wagner, M., Newman, L., D'Amico, R., Jay, E., Butler-Nalin, P., Marder, C. & Cox, R. (1991). Youth with disabilities: How are they doing? The first comprehensive report from the national longitudinal transition study of special education students. Menlo Park, CA: SRI International.

Services For Students Who Are Hard Of Hearing

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Introduction

The needs of postsecondary students who are hard of hearing are often overlooked by educators, adult service professionals and the students themselves. This morning, I would like to (1) present a working definition of the term "hard of hearing", (2) identify common issues that affect people who are hard of hearing, and (3) discuss the kinds of services or accommodations that would be helpful for students who are hard of hearing.

Definitions

Many professionals are now almost automatically use the term "deaf and hard of hearing" to refer to programs and services which were originally designed for individuals who are deaf. This leads to confusion. It is important to define what we mean when we talk about people who are "hard of hearing". Let's look at some commonalities among people who are hard of hearing.

- Individuals who are hard of hearing have some degree of hearing loss varying from mild to profound.
- The hearing loss could have occurred at any age, from birth or childhood to late adulthood.
- Most hard of hearing people are not affiliated with the Deaf community, do not use sign language and rely on English (or another spoken language) as their primary and preferred language. It has been estimated that only 1% of individuals with hearing loss learn sign language (Stone & Fennel, 1990).
- People who are hard of hearing can usually benefit from assistive listening devices to augment communication with others in one-to-one and/or group settings.
- Most hard of hearing people function primarily within the "hearing world" in terms of their family, friends and work relationships, and *want* to live within that world. They are "culturally hearing".

Question: what is the result of these commonalities? Answer: individual differences. For one thing, there is no "community" of people who are hard of hearing. In fact, most young people who are hard of hearing would say that they have never met another individual with a hearing loss, except perhaps a grandparent or other elderly relative. Because most do not have an opportunity to share and compare their experiences with others who are hard of hearing, they usually make assumptions about hearing loss which are similar to those pervasive in our society. These misperceptions contribute to the communication barriers they experience every day.

Myths or Misunderstandings

It is ironic that misperceptions about hearing loss are so common and that it seems to be such an overlooked and invisible disability. In the United States, approximately one in nine people has a hearing impairment (Adams & Hardy, 1989). That means that we all know someone with hearing loss, although that person may not identify himself or herself and may not wear hearing aids which make the disability apparent. These are several reasons that erroneous assumptions about hearing loss persist and that it is considered primarily a consequence of old age, when actually 60 percent of those who have a hearing loss are under age 65 (National Health Survey, 1988).

One common assumption is that hearing aids "fix" or "cure" hearing loss in the same way that glasses can correct myopia. This suggests that if a person wears a hearing aid, he or she can understand others and communicate as if there is no hearing loss. Family members and friends usually believe this is true. We have all heard someone complain "If my grandfather (grandmother/mother) would just wear the hearing aids, we wouldn't have to shout all the time!" Or, "If he used his hearing aids, he wouldn't complain that everyone mumbles!" What are the reactions of the people who are complaining? Confusion, exasperation, frustration, anger. What about the person who wears the hearing aid and still cannot hear clearly? He or she will experience many of the same feelings, as well as guilt and anxiety, finding fault with the hearing aid for not working right or assuming blame for the fact that it doesn't solve all of the communication problems.

The reason why hearing aids cannot "fix" a hearing loss is that they *amplify* sound but cannot always *clarify* sound for someone who has a sensorineural hearing loss. Speech discrimination can still be problematic. And, in noisy environments, hearing aids amplify unnecessary background sounds as well as conversation, making them useless at best. Hearing aids can be helpful in many settings for many people, but they are just one piece of the puzzle in dealing with hearing loss.

Another misperception many people have is that speechreading or lipreading skills are easily acquired and can be used to avoid problems associated with hearing loss. Unfortunately, speechreading ability is dramatically affected by a number of factors – lighting, visual or auditory distractions, speaker facial characteristics or gestures, distance between the speaker and listener, listener characteristics such as visual acuity, motivation, anxiety, fatigue, etc. Speechreading is very situation-specific. Even in the best case scenario, speechreading is a guessing game, and is only one more piece of the communication puzzle. Most people do not know this, however, and assumptions about speechreading therefore also interfere with understanding the effect of hearing loss.

Similarly, many people who do not have a hearing loss (as well as some people who are deaf) assume that if someone can ***hear*** speech, s/he can *understand* what is being said. In reality, speech discrimination ability also depends on many situation-specific environmental, speaker and listener factors. Not only can a hard of hearing person fail to understand what is said, he or she can also *misunderstand* what is said. Sometimes misunderstandings or misinterpretations cause greater problems than not being able to understand at all. You may have heard about a book written a few years ago by an individual with a severe hearing loss entitled What's That Pig Outdoors?, a question the author once thought he was asked by a family member.

There is another misconception that professionals as well as others may believe and is particularly insidious. It can have a very negative impact on service provision for consumers who are hard of hearing. That is the assumption that the communication problems experienced by an individual are equal to the level of his or her hearing loss. This belief results in an interpretation that a "severe" hearing loss results in severe problems, and a "mild" hearing loss causes mild problems. If we were to follow this logic, we would assume that a person who is deaf due to a profound hearing loss has profound problems. Fortunately, we have the experience to know that this assumption is not logical and does not take into account individual differences and strengths. The same factors must be considered in assessing the impact of mild, moderate and severe hearing loss. In fact, the American Speech-Language and Hearing Association (ASHA) is considering how the use of those descriptors often result in more confusion than understanding, and may recommend changes in the terminology now used by audiologists.

Adjustment to Disability

In order to comprehend the communication difficulties faced by individuals who are hard of hearing, we must understand basic information about the hearing process. An audiogram can demonstrate the effect of a hearing loss on a person's ability to understand speech. In simple terms, an audiogram measures hearing acuity at various levels of pitch and loudness. Individual speech sounds fall within varying ranges of pitch and loudness, so that a person with a hearing loss might hear only parts of words. For example, some individuals with sensorineural loss might be unable to distinguish the letters f, s, th, and k but more easily detect vowel sounds such as o, a, and u. Gaps in auditory information are often "filled in" automatically, as when a misspelled word on a page is not detected. The gaps may be filled in incorrectly, however. A friend of mine who is hard of hearing once related a perfect example of this phenomenon. As a child, she was in a canoe with family members at a lake in Minnesota, when suddenly her sister and aunt began screaming "There's a skunk in the water! There's a skunk in the water!" As she looked about her to find the skunk, the others jumped out of the canoe. She was astonished that they would deliberately jump into the water where a skunk was swimming. Only when she turned around and saw a snake in the canoe did she realize that they had been shouting "Jump in the water!" Without a visual clue, "jump" and "skunk" sound alike to her!

Through experience, people who are hard of hearing can identify many common problems that affect their ability to understand speech. Speech discrimination ability is often reduced in the following listening situations: on the telephone; in a car; in the presence of background noise; when groups of people are talking; at lectures, plays or movies; when public address announcements are given; when traveling by plane, train or bus; in business or other meetings; when the listener does not know that someone is talking; or when he or she does not know the topic of a conversation. Clearly, many of these common problem situations could occur daily in postsecondary training settings.

In addition to information from an audiogram which can pinpoint specific speech discrimination limitations and the configuration of one's loss, how a person feels about the disability and what coping strategies he or she employs have a significant impact on that individual's ability to cope with everyday communication demands. Common reactions to hearing loss range from denial, frustration, anger and depression to embarrassment, interpersonal conflicts, and withdrawal from others. In light of the these emotional factors and the lack of opportunity that most people have to learn about hearing loss, share experiences, and use equipment and other modifications, it is not surprising that hard of hearing persons often lack effective coping skills which would maximize the use of their residual hearing.

Service Considerations

We need to understand more about hearing loss. "We" refers to hearing rehabilitation professionals and educators, deaf professionals, family members, friends, and coworkers, as well as professionals and consumers who are hard of hearing.

In order to cope effectively, a person who is hard of hearing must acquire many skills and have the opportunity to practice those skills to resolve or alleviate everyday communication problems. He or she must understand how the hearing process works and does not work, depending on the severity and configuration of his or her own hearing loss. The individual also needs to be able to assess each environment in terms of communication barriers, determine the source of potential and actual communication problems, and devise appropriate solutions. Then comes what can be the most difficult challenge – taking action by changing one's behavior, telling other people what they can do to help, and reminding them when they forget.

Keeping all of this information in mind, what are the pieces of the puzzle that make up accommodations options for students who are hard of hearing?

- Outreach efforts to identify students and motivate them to use accommodations at school, in and outside of the classroom;
- Appropriate and thorough audiological evaluation and hearing aids;
- Availability and training in the use of adaptive equipment (FM or infrared systems, captioned videotapes, real-time captioning, phone amplifiers and visual alert devices);
- Attention to coping skills – information about hearing loss, support groups, stress management instruction, and assertiveness training;
- Speechreading training, including sharing information about its limitations and/or effectiveness in various situations or settings;
- Notetaking services in the classroom;
- Environmental considerations, taking into account class scheduling, auditory and visual distractions, room acoustics, class size, breaks and other factors which can influence listening ability and fatigue;
- Resource information such as Vocational Rehabilitation, Self Help for Hard of Hearing chapters, written materials, local community service programs, counseling assistance, and resource development to expand what is locally available;
- Education about hearing loss for faculty members and other school staff.

Because there is a lack of information about accommodation options in most communities and within training programs, it is imperative that educators and administrators work in conjunction with other professionals to develop and enhance services for students who are hard of hearing.

Summary

It is clear that the needs of postsecondary students who are hard of hearing are in many ways unique, so that these students do not easily fit into the support system provided for other students with disabilities. We have looked at a definition which points out that the term "hard of hearing" can be used to generally describe many individuals who experience hearing loss but are not a part of Deaf culture. We have identified some of the common issues that affect people who are hard of hearing. We have also developed a list of possible accommodations that can be coordinated and/or supported by professionals in postsecondary settings which will enable students who are hard of hearing to more fully participate in college life and prepare for their future careers.

References

Adams, P. F., & Hardy, A. M. (1989). Current estimates for the National Health Interview Survey: United States, 1988. Vital Statistics, 10(173). Hyattsville, MD: National Center for Health Statistics.

National Health Survey, Series 10, Number 166, Tables 57, 62, 1988 in Corthell, D. (Ed.). (1992). Serving the Underserved - Principles, Practices and Techniques. Menomonie: University of Wisconsin-Stout, Stout Vocational Rehabilitation Institute, Research and Training Center.

Stone, R. & Fennell, D. (1990). Rehabilitation services for hard-of-hearing persons. In D. Watson (Ed.), Model state plan for rehabilitation of individuals who are deaf and hard-of-hearing (pp. 75-81). Little Rock, AR: University of Arkansas, Research and Training Center.

Traditionally Underserved Deaf Adults: Triumph or Tragedy?

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Introduction

This seminar will try to offer characteristics of traditionally underserved deaf adults while also help you identify how your program can assist or provide needed services. Much of the information we have included was received from the Northern Illinois University Research and Training Center on Traditionally Underserved Persons who are Deaf and also from years of exposure and service to students in our postsecondary programs. A growing portion of "low achieving" deaf adults, in which a disproportionate number of who are also from minority backgrounds, are applying to postsecondary programs throughout the country. The more selective postsecondary programs have suffered some degree of enrollment decline. The extent of the decline in enrollment depended on how responsive they were to demographic insistence and if they found creative ways to accommodate students with complex and challenging needs. At the time of admissions, many students cannot meet the literacy requirements for admission. That's the time when a program stretches its role and must step outside the norm to accommodate individual needs.

There are many deaf adults who are very successful and have tremendous talents. Our presentation does not address this group. Instead, it deals specifically with deaf and hard of hearing students with multiple problems. They "lack a combination of communication, academic, social, and/or independent living skills to such an extent that they are unable to function independently without significant support services" (Long & Clark, 1994). These attributes are also applicable for vocational skills of the traditionally underserved deaf individual.

Traditionally underserved deaf students are applying to postsecondary programs and are entering classes. As a result, we have gone through many programmatic changes. We began asking questions such as:

- Where do these students fit into the services that we offer?
- What additional services do we need to better serve their individual needs?
- What types of support services must we provide to get results?
- What type of assessment data do we need?
- Are we able to serve this population? If not us, who?

Emphasis must be placed on the identification of needs for all students. The longer this phase is delayed, the greater the risk for failure. Appropriate data collection is important for several purposes:

1. Identifying physical, academic, social, emotional, and behavioral strengths and weaknesses

2. Program planning
3. Establishing additional support services for counseling, care coordination, etc.
4. Setting academic and vocational/career goals

Once a traditionally underserved student enters a program, it is usually not sufficient to provide only an opportunity for access. Left unsupported, the student is very likely to experience a series of failures. If it is the opinion of staff members that services must be provided, then a support system must be established to help the student understand his/her rights, limitations, and needs. More importantly, he/she needs to know how to access the systems that can provide support. Services that are provided and those that are needed may not be parallel. Support is needed to:

1. Make the classroom instruction beneficial,
2. Increase employment potential,
3. Appropriately encourage the selection of appropriate career goals, and
4. Encourage good decision-making processes.

Identifying students who can be included in this group may be difficult. This population may also demonstrate one or more of the following characteristics:

- Minimal speech or speech-reading skills
- Low math skills (1st - 4th grade)
- Minimal to adequate range of sign language skills
- Limited social skills
- Poor emotional control
- Difficulty establishing social support
- Desire for either positive or negative attention
- May require long-term support for successful employment
- Low reading skills (1st - 4th grade)
- Limited writing skills
- Limited independent living skills
- Fundamental need for counseling
- Low frustration or tolerance level
- Impulsive behaviors
- Compulsive behaviors
- Generally poor attitude

One of the most important predictors of academic success is reading. A significant portion of severe and profoundly deaf 17 year old adolescents have very low reading skills. While poor readers can be found among all racial and ethnic groups, the problem is most acute among the African American and Hispanic American populations. This fact is of increasing importance to postsecondary programs because the portion of minority students in the pool will increase dramatically during the 1990s (Nash, 1991).

Many vocational and trade schools require at least a 4th grade reading level in order to benefit from instruction (U.S. General Accounting Office, 1986). If Allen's findings (1991) remain good estimates, then 19% of Hispanic deaf students, 22% of African American deaf students, and 52% of white deaf students read at or above the 4th grade reading level. This leads to the conclusion that many deaf young adults are illiterate.

Reality Rub: Student Profiles

The five profiles shown during the presentation have been consolidated for this publication. The profiles were gathered from information on students referred to our vocational assessment center as a result of exit exam failures, unsatisfactory progress, suspected learning disabilities, lack of progress, as well as for consideration for re-admission. One student was hard of hearing and did not have sign language skills. All five were from southeastern states. While the authors were unable to gather in-depth information on several students from secondary programs, records indicated a variety of completion credentials including state certificate, certificate of graduation, diploma, graduate, and unknown status. Of these five students, four were in college programs for approximately three years while the fifth student was referred for assessment after one semester and given information for further career exploration. The other four students dropped out of college because of either frustration and or the lack of funding.

- Average number of remedial course hours (n=5): 42 hours
- Placement scores required prior to taking major courses: Rdg - 41 Math - 42 Wrt - 41
- Actual placement scores (n=5): Rdg - 29 Math - 30 Wrt - 28
- Performance IQ, WAIS-R (n=5): 87
- Stanford Achievement Test - HI (n=3): Rdg Comp - 3.0 (GE)
  Math - 3.1 (GE)

The Cost/Impact of Insufficient Data

What is the potential negative impact of not using assessment data for those individuals discussed in this presentation? In addition to not having information for guidance, program development, and appropriate support services, there are other costs that are described below.

Economic. Individuals misplaced or misdirected often deplete limited training funds from various sources such as Vocational Rehabilitation, scholarships, grants, family resources, etc. In addition, individuals spending years in programs where there is minimal ability to benefit, are losing valuable time away from the job market, the opportunity for advancement and salary increases . . . not to mention the tax dollars these individuals could personally be contributing.

Emotional. "Why wasn't I told the truth about my skills a long time ago?" is a question program staff often silently echo with students. The sense of frustration and failure can be an immeasurable cost, having a lasting impact on some of these students. The longer students remain within a college setting, and the stronger their self-identity crystallizes as a "college students," the more difficult it is to endure what can become a tremendous sense of failure. The often unmentioned reverse of a positive self-esteem is not only knowing one's capabilities, but also knowing and accepting one's limitations.

Data Collection: An Essential Component

Traditionally underserved students may come to programs at great risk for problems, having concomitant conditions and severe learning problems that make assessment information invaluable. Without clear descriptions of unique learning styles, academic potentials and achievement levels, the student is set up for failure and frustration as they move through a system that is not aware of or designed for their needs (Glenn, 1992).

Further supporting the concept of risk, Nash (1992) reported that hearing impaired students are at a great risk: only 50-55 percent will earn high school diplomas, 10-20 percent will receive certificates, and 25-30 percent will drop out. During recent interviews with supervisors of transitional studies including remedial and non-credit courses, they related that over the years they have served almost all of the deaf and hard of hearing students attending their institutions. A low percentage have completed the transitional studies program and successfully moved into their major areas of study. This is not to say that deaf students cannot be successful, but rather to imply that the system may not accurately evaluate and identify strengths and limitations of the students.

Assessment Reluctance: Why?

Regardless of the growing formal and anecdotal evidence that emphasizes the need for evaluative data to be used in determining programmatic needs, there continues to be resistance to gather and use this data by many support and instructional staff. The reluctance to use either diagnostic procedures or previous assessment information may be attributed to the following:

History of abuse. There appears to be an attitude carried over from the late 1960s when many training programs rightfully challenged invalid applications of assessment procedures. But assessment data, if correctly used, can assist career exploration, program selection, support service linkages, instructional methodology, etc.

Empowerment movement. In the past ten years, there has been a very strong movement to emphasize the abilities of deaf and hard of hearing individuals. Although this attitude has been and continues to be appropriate and beneficial, it has sometimes been taken to extremes, almost ignoring what individuals cannot do, potentially misleading them.

Open door admissions. Many community colleges have open door admissions policies that involve minimal entrance requirements. These flexible requirements are often a boon for adults who have the skills and potential to success; however, the process may also allow students to enter programs without accurately evaluating or gathering information needed to identify strengths and limitations.

Turfism and time restraints. It takes time to collect data and it takes trust and effort to work with other specialists unfamiliar with deaf and hard of hearing students. Turfism and the tendency to "be all things" to our students sometimes prevents professionals from using specialists to assist in the data collection process.

Career Development. Most models of career development support the notion that children begin vocational exploration by first following their interests, dreams, and fantasies, and later dreams and interests are tempered by realities provided by actual capabilities and limitations, achievement, and experience. Without clear information concerning student potential, systems can inadvertently prolong a fantasy stage of career exploration. This experience can be described as a clash or internal battle between one's career interest and actual ability or potential.

Public Misperceptions. Like their hearing peers, some deaf and hard of hearing people can and do have challenges that make college success improbable. When students and program staff are not given accurate data, and when these same students remain within a college setting for long periods of time, an unfortunate impact relates to others misperceiving that "all deaf and hard of hearing people are unable to do college level work."

How To Minimize Costs?

Although the authors are not the "experts" and continue to struggle with the best approaches to serving these students, we have a number of recommendations that might minimize frustrations. General recommendations for staff members are as follows:

Don't "throw the baby out with the bath water." Become comfortable with assessment information and use this information to assist students in making choices in a realistic manner. Enlist people with credentials in assessment, e.g. psychologists, diagnostic evaluators, vocational evaluators, etc., to assist in understanding and explaining information in an honest, helpful, and sensitive way.

Know "red flags." Become knowledgeable of the skills and abilities required by various programs and majors, and know the signs or indicators that might indicate a potential inability to benefit by continued efforts.

Investigate and innovate. Take the time to investigate staff or student concerns about learning difficulties. Ask for permission to request additional information from other sources, e.g., high school records, teachers, and/or referring agencies having other assessment data, etc. Also, ask open-ended questions of students showing serious learning problems. Their responses to these questions might lead to recommendations of additional assessments. Questions might include: specific duties and opportunities of chosen major, local and state geography, and even elementary questions concerning calendar/time and general knowledge of the environment, to name a few.

Formal service coordination. Case management or formal service coordination can also be very helpful. Once the student is accepted, it is important that regularly scheduled meetings are held between the case manager and the student. Progress should be assessed, barriers identified, and problem-solving techniques practiced. A formal case management process can structure the needed assessment and help develop plans for academic, independent living skills, and counseling. A case manager can also assist with the coordination of monitoring reassessment needs and recommend any programmatic changes. Using this process, there is a good chance that students will not attend a program for years with little or no benefit. Systematic case management can promote ongoing meetings with opportunities for open discussions concerning student potential and performance standards.

Advocate and collaborate. Postsecondary staff members must communicate with referring parties, e.g., secondary programs and vocational/human service agencies, etc., regarding the skills and competencies needed to become a successful consumer of various majors and programs. In addition, staff members need to become advocates for the following:

- Career guidance and counseling
- Early and compassionate assessment sharing
- High standards and rigorous training
- Early career/occupational exposure
- Accurate and non-misleading graduating credentials

Training and sensitizing. Professionals knowledgeable about the potentially negative effects of paternalism and overprotection should sensitize and train staff about the very human, and, most often, well-intended feelings that can sometimes lead to open and frank discussions about performance and potential.

While an individual may function at a higher level in one area, it is the overall level of functioning that is important when determining a classification of traditionally underserved. Areas of consideration should be independent living skills, vocational skills, academic achievement, and social/emotional skills. We must look at the broad picture and plan for a total program. In order to plan effectively, we suggest the following programmatic concepts:

- regular meetings to discuss program progress in each class
- flexible time limits
- program alternatives to address functional academics, sign language classes, etc.
- positive emphasis on vocational courses and behaviors
- behavior management support
- work adjustment skills and career counseling made available to all
- on-the-job training opportunities
- tech-prep concept adopted, including hands-on, applied learning in technical areas
- pre-college preparation program
- cooperative efforts with high schools that refer students

It is strongly recommended that assessment data be compiled to include: psycho/educational information, physical and occupational therapy, social-emotional adaptive coping, and sign language assessment data, along with reading, math, and writing levels.

A tremendous amount of information about the traditionally underserved deaf and hard of hearing population was made available from the Northern Illinois University Research and Training Center on

Traditionally Underserved Persons who are Deaf. Unfortunately, this center lost its source of funding and closed in 1995. This is an example of how funding sources for the programs that serve multiply disabled deaf people have been cut, and then cut out.

In closing, the Commission on the Education of the Deaf raised the issue in 1988 in Toward Equality: Education of the Deaf, A Report to the President and Congress of the United States:

> The vast majority of postsecondary-aged deaf persons are unemployed or seriously underemployed because appropriate rehabilitation training and related services are not available. . . . Under the current system, state rehabilitation agencies must provide time-limited services and, consequently, they cannot always deliver comprehensive rehabilitation services to a population whose rehabilitation needs are long-term and intensive (p. 69).

References

Commission on Education of the Deaf. (1988). Toward equality: Education of the deaf. Washington, DC: U.S. Government Printing Office.

Nash, K. R. (1992) The changing population: A challenge for postsecondary education. In S. B. Foster & G. G. Walter (Eds.), Deaf students in postsecondary education, (pp. 4-21). London: Routledge.

Glenn, S. (1992). Prevention programs with deaf youth: From a history of nonsupport to creative access. In The next step: A national conference focusing on issues related to substance abuse in the deaf and hard of hearing population, (pp. 173-178). Washington, D. C.: Gallaudet University Press.

Long, G., & Clark, D. A. (1994). Defining traditionally underserved persons who are deaf. NIU-RTC Research Brief. DeKalb, IL: Northern Illinois University.

Nash, K. (1991). Programs and services for the postsecondary deaf: Strategic planning considerations for the 1990's. JADARA, 25(2), 29-34.

Tools For Language: Rehab 101 and Cultural Diversity*

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I have a difficult topic to discuss because we do not have a universal curriculum that is developed for teaching language to deaf and hard of hearing people. It is also a well-known fact that one of the major problems that many deaf and hard of hearing persons who are in transition, unfortunately, face is communication barriers. In that regard, Deaf ACCESS provides these individuals with an outlet for socialization and information while responding to their language needs during involvement in rehabilitation, transitional instruction, and independent living programs. This presentation will provide an overview of the role of rehabilitation in facilitating the transition of deaf and hard of hearing individuals to post-secondary programs and the general community through direct instruction and independent living programs.

Using several case examples, this presentation will also describe the various approaches used by Deaf ACCESS as a rehabilitation program to provide culturally diverse deaf individuals with language skills to succeed in post-secondary programs and the larger society.

Mission Statement

Our mission states that we strive: "To provide opportunities for deaf and hard of hearing individuals to succeed in post-secondary training and community settings." To accomplish this there must be significant people in the deaf and hard of hearing individual's cultural, training, and work environment. Providing appropriate educational and rehabilitation services to deaf and hard of hearing individuals, especially those who also possess secondary disabilities, has historically presented challenges to us. Characteristics common to multiply handicapped deaf individual include limited communication, low reading and writing skills, deficits in intellectual functioning, and lack of an adequate support system. Before the journey of adult life transition begins, these individuals must develop language skills in order to communicate.

Deaf ACCESS' Language Assessment

In 1981, Rehabilitation Services through Deaf ACCESS initiated a program to assess language functioning of deaf adults in Arkansas. The language assessment tool was created as a result of the need to test language ability. Approximately 25 deaf adults were referred to Deaf ACCESS for language assessment. Sixty percent of the referrals were Black and most of them were from the eastern Mississippi-Delta area of the state. There were also referrals from the Ozark region of the state. Many were drop-outs; only a few of the 25 referrals had graduated from high school, and those returned home without any established vocational goals. These individuals were referred by regional independent living counselors across the state.

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* This presentation was made in June, 1994 in Atlanta, Georgia at *Tools for Language: Deaf Students at the Postsecondary Level*, a PEC-sponsored mini-conference.

Tools Used

The tools we used were simple--an 8mm projector and a film entitled, "Life on the Farm." The purpose of the film was to evaluate the communication skills and assess the various communication modes each client used. Some of the areas tested were receptive fingerspelling, expressive fingerspelling, receptive ASL or signed English, reading, writing, etc. We selected this film because it had a lot of action and a variety of animals were shown with a farmer and his family doing a variety of work.

After the assessment was completed, the client was scheduled for individual classes with an instructor and a peer partner. A peer partner must have effective interpersonal skills as well as knowledge of certain ethical issues and program rules and policies. Such policies include confidentiality, record keeping, and verbal reporting to the appropriate personnel.

The peer partner promoted a positive image to the community by utilizing deaf organizations and other educational programs as resources for each client's learning experiences. As a result of these efforts, several senior citizens became interested in helping the deaf clients learn language. Therefore, we created a new program called "Project Granny." Each client was assigned to two or more senior citizens working with learning projects.

Another tool we used for language development evolved because one of our peer partners was an artist. He drew pictures and went on site to enhance learning. Presently, we have changed some of our procedures for teaching language. In keeping up with technology, we use Apple computers and programs for language development. Staff members make videotapes demonstrating sign for a variety of situations. The tools that involve more visually-oriented objects are most effective.

Case Studies

Four case examples are presented with information included on eachindividual's educational background and related personal data. I will describe the reason for referral, the services provided, and service delivery outcome for each case.

Case Example 1

After graduation from the Arkansas School for the Deaf in 1991, Tim, a white male who became deaf at age 9 months due to spinal meningitis, returned home and remained there for two years. During that time, Tim married and secured a job. Unfortunately, he begin to experience marital problems, and eventually was divorced. The divorce became too much for him to deal with and, after losing his job, he had no money to pay bills.

In 1993, an independent living counselor in the local rehabilitation office referred Tim to Deaf ACCESS for temporary housing while he looked for a job. Tim and his instructor developed a lesson plan for job seeking strategies, language development to strengthen present skills, algebra instruction, and participation in the adult education program at the Arkansas School for the Deaf. Tim secured a job as a custodial worker, but didn't know at that time he was preparing himself for something that would change his life. Tim's instructor advised him of his potential for college. He increased his desire to improve his language skills and eventually took an entrance exam and was accepted at Gallaudet University. As another accomplishment, Tim was not required to take preparatory classes due to his high scores on his entrance exam. Presently, Tim has successfully completed his first year in college. He works as a mentor at Deaf ACCESS during the summer.

Case Example #2

Tommy is a Black male who became deaf at the age of 3 years due to meningitis. Because Tommy's parents had no prior experience with deaf people, they were uncertain how best to assist him. Although they were advised by the family doctor to enroll him at the Arkansas School for the Deaf, his parent were uncomfortable with the idea of placing him in a residential living situation at a predominantly white school. Tommy's parents kept him home during his childhood years and he was not placed in any type of educational program. His world essentially revolved around his family and neighbors in his hometown. Because the town was small (approximately 200 residents), everyone knew each other and willingly provided support for one another. Thus, Tommy was able to converse with his neighbors using gestures and "home" signs. He did not have direct contact with service providers until a social worker visited his home when he was about 17 or 18 years old. The social worker decided to contact a local Independent Living Services (ILS) counselor serving deaf clients to assist him. After several visits, the ILS counselor, who was white, was not able to successfully persuade Tommy's parents to permit him to be sent to Little Rock for training.

A year later, a Deaf ACCESS staff member who was a black professional, made a visit to Tommy's home to encourage him to enroll in a Summer Language Evaluation and Training program. The black professional staff member, after a lengthy discussion, was able to gain the trust to Tommy and his parents to attend the training program in Little Rock on a trial basis.

This was Tommy's first venture outside of his southeastern Arkansas home area. Much time and effort were provided by both a black professional and black deaf peer partner in helping Tommy adjust to the new environment. He moved into a boarding home.

Transportation was provided, but Tommy eventually learned how to ride the city bus. Instructional services in independent living and communication occurred at Deaf ACCESS and in the home of a black deaf peer helper. Because of the instruction he received in ASL, plus his daily exposure to fluent deaf and hearing ASL users, his communication skills improved dramatically. He was obviously very observant and a quick learner. In addition, he received on-the-job training in janitorial work at Deaf ACCESS and was employed there for a short time before obtaining full-time employment. He has successfully maintained his job for the past eight years, has his own apartment, passed the driving test, and is saving money to purchase a car.

Case Example #3

This is a case example of an 42 year old white female named Sue who is deaf and has cerebral palsy. She attended special education classes in Little Rock for twelve years, then returned home in the rural Ozark region to live with her mother and sister. Initially, she had a difficult time getting assistance in her small rural hometown. Several months later she was residing in Human Development Center and stayed there from 1974-1984.

She was referred to Deaf ACCESS in 1984 by her local counselor. Her overall goal was to become independent. Information we received indicated that Sue could not function on her own, was mentally retarded, and required 24 hours daily supervision.

The instructor assigned to Sue observed an enormous amount of energy exhibited by Sue in her quest to learn. Sue lived in an independent residence for women and commuted each day to Deaf ACCESS on a city bus. The staff of the women's residence had an ongoing collaborative relationship with Deaf ACCESS' staff by providing interpreting support, sign language classes, and other consultation requested.

Deaf ACCESS' staff provide transportation instruction for Sue and she learned to use public transportation in one week. We provided language skills class, and interpersonal skills training to help her out of the institution mode to which she had become accustomed.

Presently, Sue works in a supported employment program and continues to use follow-up services with Deaf ACCESS. She is a sociable young woman who has maintained her own apartment. Her willingness to succeed in life helped her overcome many educational, social, economic, and communication barriers.

Case Example #4

Wan, an Vietnamese male, was born in 1974. His five sisters and parents are hearing. Wan never attended school in Vietnam. He communicated by using gestures and acting out his thoughts. He moved to Arkansas from a Philippine refuge camp to join his family in 1990. Wan stayed home with his parents after he arrived in Arkansas and was not involved in any programs. An independent living counselor referred Wan to Deaf ACCESS for instruction in American Sign Language, social skills, and literacy. Communication was very difficult.

During the admission interview, Wan used gestures and his parents spoke Vietnamese. The Deaf ACCESS staff relied on Wan's cousin who spoke Vietnamese, English, gesture, and home signs to faciliatate communication. Fortunately, Wan was a fast learner with good social skills. His living environment provided a healthy and positive learning experience.

After developing the ability to communicate in ASL on a basic level, Wan worked with the staff at Deaf ACCESS to consider employment opportunities. When asked about past work experience, he told us of his experiences in Vietnam. His family was very poor and had to do whatever they could to get by. He described a particular time when he earned money by selling gold at the street market. While it was difficult to understand the details of his tale, it appeared that he was employed to dig up bodies of the deceased for relocation. He explained workers who wore tall black rubber boots and gloves as the dug in graveyards. When they reached the bodies, they would remove all the jewelry and even gold teeth, hiding them in their boots and inside their gloves. These were all taken to the market later and sold for cash.

Wan was soon employed at a fast-food business in Little Rock where he learned many basic vocational skills. He then moved to the Hot Springs Rehabilitation Center for training in printing where he earned a printing certificate in December, 1993. He recently passed the written driving test, and has a certificate for successfully completing driving school.

Summary

It is apparent that language acquisition is one of the cornerstones for independent functioning. However, few tools have been identified that assist in teaching language to the special population of traditionally underserved and severely disabled deaf and hard of hearing persons. The Deaf ACCESS program has experienced successful results with a creative approach to teaching language to clients from a variety of cultural backgrounds. Components of this approach include:

- Creativity in designing language assessment and teaching tools.
- Use of a culturally diverse staff to develop rapport and trust with clients and their families.
- Individually designed teaching program to fit with the unique learning and cultural needs of the client.

This process is as effective as it is simple and low cost. Both staff and clients feel good about themselves and the mutual sharing of language. The Deaf ACCESS program will continue with this basic approach, and incorporate new tools and technology for language acquisition as our program continues to grow and develop.

Adjusting to Hearing Loss:
The Trials and Tribulations of a Deafened Adult

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The most effective way for me to begin explaining the issues related to working with deafened individuals is to describe my personal experiences in becoming deaf. I became deaf at 18 years of age due to a viral infection and high fever. I was a freshman in college and beginning to develop my own life plans. Having grown up in an Iowa farm community, I had no previous experience with persons who are deaf. I was also relatively unexposed to persons with disabilities or persons of other cultures.

I point out this lack of exposure to disabilities because the majority of persons who become deaf or are in the process of losing their hearing have had no previous contact with person who are deaf. They may have had contact with elderly persons who are hard of hearing or deaf but that is a normal expectation. People do not expect to lose their hearing as a young adult or in middle age.

As an 18 year old college freshman I was unable to accept my hearing loss and was living in a state of denial. I DID NOT WANT TO BE DEAF! Deafness is something that happens only old people. It was not supposed to happen to me. I did not tell anyone that I could not hear. I continued to attend classes and did not inform my instructors, classmates, or friends of my hearing loss. Some of them noticed there was a problem but I was not about to tell them.

I did not go to a doctor or seek assistance. The first time I went a doctor was when my parents took me during spring vacation. They noticed my hearing problem during my week at home. They probably viewed my failure to respond as being a teenage rebellion and I was blaming them for not telling me things or not speaking clearly. Internally, I was aware there was a problem but was not willing to admit it.

This first trip to an otologist that provided me with my first experience with doctors who have only a medical perspective of hearing loss. The doctor examined me and could not find any medical problem. He observed some scar tissue that was related to an infection but there was no visible problem with my ears. This doctor then suggested that I may be worried about the military draft (this was 1971 and the time of the draft lottery) and my hearing loss was a psychological reaction. I admit that I was not interested in being drafted but, 25 years later, it seems obvious that my deafness was not psychological. In private, the doctor also asked me if I had been smoking marijuana and if that may have been the cause. I had not yet been exposed to marijuana at this time so it was not a possible factor.

The feeling I remember most is that I did not want to be deaf. I was uncomfortable trying to explain my deafness to friends who had known me all my life. It was awkward to explain my hearing loss to anyone. I became isolated and chose to avoid obvious social situations if possible. In social situations, I was bluffing my way through conversations, usually smiling and nodding my head to comments from others. It was very embarrassing to deal with these situations and I am sure that I made a fool of myself many times over with inappropriate comments.

Looking for a Cure

I did not want to be deaf and was looking for a cure. I was only able to see the negative aspects of being deaf. I could not understand classroom lectures, residence hall conversations, television programs, radio programs, or use the telephone for conversations. I was depressed because I had become very dependent on the radio for entertainment such as baseball, basketball and football games. I was focusing on the things I could NOT do and was ignoring things that I could do.

While looking for a cure, I had to deal with communication myths that I had developed as a hearing youth. It was my belief that a hearing aid would solve all my problems. Everyone has read the advertisement that states something like "If you can hear sounds but not understand speech, this hearing aid is for you." That described my hearing loss exactly because I could hear people talking but could not understand what they were saying. I can remember my first hearing aid. It was purchased in a store about five blocks from campus. I tried the aid in the dealer's store and was able to understand his speech much better with the hearing aid. I was also able to understand the time when dialing the operator on the phone. I thought I had found my cure.

However, after walking back to campus and entering the residence hall, I discovered that I still had a problem hearing what people were saying. Did the hearing aid break during my walk back to campus? It was my first experience in comparing a nice quiet office environment with the real outside world. I continued to use a hearing aid for almost 20 years but the benefits I obtained were related environmental sounds rather than a significant increase in comprehension.

The next cure I sought for my communication problems was to learn lipreading. It was my belief that all deaf persons could lipread. Since my grades in college were worsening, I decided that to drop out of college, take lipreading classes and work on the farm where my receptive communication needs were minimal. Cows and pigs do not talk and I was smart enough to get out of the way if they started running at me.

I am sure that most of you are aware of the difficulties with lipreading. You can only see about one-third of the sounds as they are said and many of them look alike. I was never able to learn lipreading well. I nominate myself as one of the worst lipreaders ever. The only sentence I lipread well is when people I have just met ask me "Can you read lips?" The reason I am able to understand that question is because I have been asked 1,001 times. In my speech Thursday night it was 1,000 times but last night I went out to a restaurant and it became 1,001.

My inability to lipread or receive substantial benefit from a hearing aid added to the negatives I had been emphasizing with deafness. Written communication was my only effective mode of receptive communication and few people were willing to use this method on a regular basis. I was telling myself "I can not do this" over and over. Deafness was perceived as a stigma and I was developing a negative self-concept.

People who become deaf later in life often have a similar perspective and reaction. Deafness is viewed as a negative and there is a need to assist these individuals in dealing with these negatives and developing a more positive outlook for themselves. To paraphrase comments by I. King Jordan, President of Gallaudet University, while deafness may not be a positive thing, you can not allow it to become a negative thing.

It was almost two years after losing my hearing that I informed of services available to me and introduced to sign language. Information on vocational rehabilitation services was given to me by a social worker I met while going for an ear examination. My parents continued to be supportive and arranged for ear examinations to seek a reason for my hearing loss. I was fortunate to have an excellent VR counselor who provided me with information on almost all the postsecondary education options available to persons who are deaf. These options included Gallaudet College, National Technical Institute for the Deaf, an oral program in Utah, TVI in St. Paul, California State University Northridge and the Program for Hearing Impaired (PHI) at Northern Illinois University.

I chose to attend Gallaudet College because it offered the four year program I was seeking. I took an eight week sign language class to prepare myself for Gallaudet. As you can guess, this class did not prepare me for the receptive communication skills needed at Gallaudet. My signs were limited to "My name is S-T-E-V-E" and a few other simple sentences. Regardless of my inability to sign, I did recognize that sign language was much more effective for me than any other communication method I had tried except for writing. I was able to develop my sign skills during my three years at Gallaudet and now it is my preferred mode of communication.

Adjustments

Now, I would like to use my personal experiences to assist you in understanding the adjustments faced by deafened adults. Zieziula and Meadows (1992) identified five major adjustment themes that deafened individuals confront: spectrum of emotional responses, secondary losses, confusion of identity, acceptance, and need for competent professional assistance from medical and social-support personnel. These themes were developed based on interviews with 11 deafened individuals in an effort to explain the emotions involved with hearing loss.

Emotional Responses

The emotional responses I have already discussed include denial and anger. I did not tell anyone I was deaf. Hearing loss is easy to hide and I did that for at least three years. Even today, I still hide my deafness and it is easy for me to do because I have good speech. I was also angry about the things I could no longer do, especially the loss of radio and listening to sports events. That caused a major change in my social activities.

The inability to carry on a casual conversation or to pick up the telephone and call a friend were aggravating. I was focusing on the negative and not looking for positive abilities.

If a deafened adult focuses on the negative, self-esteem will plummet and lead to feelings of depression and guilt. A person will always wonder if there was something he or she could have done differently to avoid becoming deaf. In the case of sudden onset, there are usually many "If" questions a person will ask themselves. In some cases, it is possible that deafness could have been avoided. However, it is not healthy to allow a person to dwell on the negative side of the situation.

Many deafened adults may view deafness as a temporary condition that can be cured by medication or surgery. I can remember my most frequent dream was that I was able to use the telephone. Looking back now, this dream represents my desire to be a hearing person. I no longer have that dream but I really can not tell you when I stopped having that dream. Since deafness if viewed as temporary, people prefer to hide it rather than acknowledge it publicly. The individual may display more anger-related emotions as it becomes obvious that deafness is not temporary (Larew, 1994).

Secondary Losses

Secondary losses refers to the impact hearing loss will have on the ability of the individual make adjustments for family, friends, work, and social activities. The deafened individual often is self-absorbed and not able to consider the impact their hearing loss has on others. The onset of deafness affects also impacts parents, spouses, siblings, children, and significant others. Having a deafened person in the family disrupts the established communication patterns and routines and communication becomes more labor intensive. Writing notes, speaking slowly to facilitate lipreading, and learning sign language are examples of changes that may be needed to develop effective communication. The deafness of one family member may create the feeling of extra responsibility (i.e., interpreting, making calls, serving as intermediary) for another family member. To avoid feelings of resentment and/or anger, these issues need to be addressed and resolved.

As I stated earlier, I was fortunate to have a supportive family. Every member of my immediate family has taken at least one sign language class. They are not fluent but they can communicate simple messages to me if they choose. I do have to admit that I have never discussed all the issues I mentioned with my family because we are not able to communicate fluently in sign language.

I feel there may be a similarity between families of deafened adults and the families of deaf children. If the family decides to learn sign language, they frequently learn only basic survival signs or homemade signs. Families do not receive enough information to make decisions regarding available options and services.

Confusion of Identity

Adjustments relating to identity involve the deafened person realizing he or she can no longer function as a hearing person. Most deafened individuals retain their speech skills so they are able to continue using speech. However, deafened individuals are aware of the lack of information they are receiving and, consequently, the need to develop alternative receptive communication skills. If the deafened person is introduced to other persons with hearing loss -- deaf, deafened or hard of hearing -- the individual becomes aware of groups of people who recognize their hearing loss and have adapted alternative methods of communication. Realizing this need for alternative communication and the fact that "I am no longer hearing" can cause confusion of identity.

Exposure to other persons with hearing loss assists deafened individuals in realizing they are not alone. They can explore social options available to them and possibly choose to become involved with other persons who have a hearing loss. The deafened person does not always make a choice between one group or another but, as all individuals tend to do, will gravitate to a group of people where they feel most comfortable. A change in social choices also impacts family members as discussed previously.

Acceptance

Accepting deafness is a process that requires a varying amount of time. In most cases, it takes an individual two to three years to integrate deafness into their lifestyle. This does not mean the individual cannot function prior to this time but that acceptance is a lengthy process. It is unrealistic to expect the individual to make the necessary life adjustments in a time frame measured by weeks or months.

Participants involved in the Zieziula and Meadows study expressed that while they had generally come to accept their deafness, there was concern that family members and significant others had problems accepting their physical and social changes. The necessary adjustments need to be discussed and agreed upon so that all family members feel comfortable with their expected roles.

Need for Competent Professional Assistance

The need for competent professional assistance is why I am talking with you today. Professionals in the field of deaf services need to be aware of the needs of deafened individuals. All too often, professionals recommend the person learn sign language and ignore the emotional adjustments I have discussed. It is important to understand that sign language is not the answer. Learning sign language can be helpful but it is not the answer.

Professionals need to understand the deafened individual is looking for a cure. Hearing aids, cochlear implants, and lipreading represent possible cures. As a professional, it is your responsibility to make the individual aware of these options, provide information on the pros and cons, and allow the individual to make his or he own choice.

Factors to Consider

When working with individuals who are deafened, there are five factors to consider. These factors are important with all individuals who are deaf but I will explain them as they relate to deafened individuals. The five factors are: age of onset, time elapsed since hearing loss, etiology of hearing loss, degree of hearing loss, and family reaction.

Age of onset is important as it relates to future plans. I could say that I was fortunate to become deaf at 18. I had not yet established myself in the work world and my future plans were still tentative. My hearing loss became a key factor as I developed my future career plans. People who become deaf later in life are not able to do this. If a person becomes deaf at age 30, having worked in a career area of 8-10 years, it would be very difficult to give up a job and go to college to learn new skills. There would be more adjustments needed if the person has family and other financial responsibilities.

The time elapsed since hearing loss is important because it will help you understand what stage of adjustment the individual may be experiencing. If the person has been deaf for several years and has received no assistance, it may take a longer time to develop a more positive attitude about hearing loss. If the hearing loss is very recent, then this individual may be denying the impact of hearing loss and looking for a sure cure.

Factors included with the etiology of hearing loss involve if the loss was gradual or sudden. Did the individual have time to prepare for loss of hearing or did it happen overnight due an accident, medical complications or other traumatic events. Several people I know became deaf due to neurofibromatosis (NF). This involves tumors on the acoustic nerve and also results in facial paralysis and other physical limitations. The trauma of NF or other disabilities must be considered when working with the individual.

The degree of loss has some impact on the individual's ability to benefit from amplification and their ability to continue to utilize speech for receptive communication. Many people who become deaf prefer to call themselves hard of hearing because there is less of a stigma involved. It is my opinion that individuals can label themselves as they prefer. I know several individuals who say they are hard of hearing but, in reality, they are deaf. I know my hearing loss is profound and my decibel loss is greater than many people who were born deaf. I called myself hard of hearing for several years even though I was only able to function at that level for two or three months.

Assessment of the family reaction allows the professional to determine what type of support system the deafened person has at home. As previously discussed, the impact of becoming deaf is not limited to the deafened individual alone. If a study was done, I think that the responses of families including deafened individuals would be very similar to those of parents of deaf children. Only a small number of families learn sign language and other communication options are often used. I am willing to bet that the deafened person often feels very isolated during family activities.

Personally, I was very fortunate to have a supportive family. I would not be speaking here today if they had not encouraged me to continue my education and supported my decision to learn sign language. My parents also provided financial support when needed. No one in my family is highly skilled at sign language but they have taken sign language classes and utilize fingerspelling and simple signs when needed.

Working with Deafened College Students

When beginning to work with deafened college students, it is important to answer two questions: "How does the individual communicate most comfortably and effectively?" and "What are the goals of the student?". If the individual is recently deafened, there is also the question of how to counsel a person who has no effective method of receptive communication.

Communication

For reasons already discussed, many deafened individuals are not skilled at lipreading. They may be able to use lipreading to communicate in one-to-one situations but would not be able to understand in a classroom setting. Based on their experience with conversations in different situations, deafened people may be more adept at anticipating questions or comments to assist with their lipreading skills.

Written communication is often effective with deafened individuals but the process is time consuming. When using written communication, phrases can often be used instead of complete sentences to save time. College personnel need to be aware of the need for written communication. Deafened people are similar to other persons with hearing loss in that they do not always admit they do not understand.

For classroom communication, use of voice to text translation is more effective than use of a sign language interpreter. Most deafened people are not skilled in American Sign Language (ASL). If they have learned sign language, it is often a form Signed English. Since English is likely to be the individual's first language, it is often easier to learn Signed English. It is essential that professionals understand that learning sign language is not the answer for resolving all the issues and adjustments faced by deafened individuals. It takes time for a person to acquire sign language skills, and frequently, the deafened individual does not have the opportunity to practice and develop receptive sign language skill levels needed to be effective in the classroom environment.

There are two different methods of providing voice to text translation. One is using computer aided realtime translation (CART) which involves hiring a court reporter who has the computer technology to convert their shorthand to text. This accommodation is often expensive, with fees ranging from $60-150/hour, depending on the court reporter and the location. Not all court reporters have the training or technology available to provide realtime captioning services. The National Court Reporters Association has developed a national certification test for realtime translation. Persons achieving this certification are able to translate materials at the speed of 180-200 words per minute with 96% accuracy or better. There are approximately 300 reporters who have the Certified Realtime Reporter (CRR) certification so availability is an issue. This situation is similar the existing problem with sign language interpreters in that there are many court reporters who do realtime translation but do not have national certification. Persons who want a list of certified reporters should contact the National Court Reporters Association.

Another form of voice to text translation involves hiring a typist and using a laptop computer. This method is less costly but also less effective as few typists are able to keep up with the normal rate of speech. Information is often missed so the student may not be full aware of topics discussed in the classroom. This shortage of information must be addressed and resolved.

Goals

It is important to be aware of the goals of the deafened student in attending college. The goal may be to learn a new career or to develop skills to continue current employment with different responsibilities. Deafened individuals may choose to learn a new career because of the communication demands in their job prior to becoming deaf. Some jobs, such as telephone operator, obviously require a career change. The Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 provide a method for deafened individuals to retain their employment using reasonable accommodation. However, many deafened individuals are not aware of assistive devices such as TTYs, flashing signal devices, CART and other devices available that can provide accommodation.

The deafened individual may be able to continue to perform the job with accommodation but the communication demands are stressful. The individual may choose to pursue a different career where receptive communication is not as demanding. The person may also be seeking a change in environment. Staying in a job where you can no longer communicate with your co-workers can create stress, so moving to a new environment is seen as a way of relieving stress.

When advising the deafened student, it is important to discuss the communication demands of the chosen field and how the student may be able to cope with these demands. The student may need assistance in identifying career areas where his or her skills may be used but the amount of personal communication involved is minimal.

Conclusion

Assisting the deafened student at the postsecondary level requires an understanding of the adjustments that are facing the student. Of primary importance is assisting the student to develop receptive communication skills. The student should be informed of the communication options and allowed to choose the method they prefer. Exposure to other persons who are deaf, deafened, or hard of hearing is also beneficial. It allows the student to know they are not alone in dealing with hearing loss.

References

Larew, S. J. (1994). Deafened adults: Adjusting to a third world. Journal of American Deafness and Rehabilitation Association, 27(4).

Zieziula, F. R. & Meadows, K. (1992). The experience of loss and grief among late-deafened people: a report on research and theory In S. Larew, K. Saura, & D. Watson (Eds.), Facing Deafness, (pp. 58-63). DeKalb, IL: Northern Illinois University Research and Training Center on Traditionally Underserved Persons Who Are Deaf.

Academically Gifted Deaf Students Attending Regular Four-Year Colleges and Universities

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Abstract

Recent research has indicated that there are approximately 2,000-3,000 deaf students attending regular four-year colleges and universities. The research has indicated that these students are academically gifted and have certain characteristics that contribute to their success in a mainstreamed postsecondary environment. It has been found that the students are integrated with their hearing peers and participate in the academic and social activities of their schools. Furthermore, interviews with both the students and the service providers shows that the adequacy and quality of services for these students varies from campus to campus.

INTRODUCTION

Academically Gifted or Academic High Achiever

A great deal of attention has been focused on meeting the educational needs of gifted students; however, we do not know if the same attention is being given to what we could call "gifted deaf students." The educational system in schools for the deaf is generally focused on meeting the needs of the average deaf student, or those most in need of special efforts. It is not to say that the bright deaf students are left out; there are many schools taking the needs of these students into consideration and providing an educational setting that meets their needs. We do not know, however, if "gifted" deaf students in the mainstream are receiving the same kind of support and attention that is focused on hearing students. It can only be assumed that each school may approach this issue in a different way,

It is also difficult to define what is meant by a gifted student, much less a gifted deaf student. There is no criteria to determine how deaf students could be classified as gifted or not gifted. Thus, it would be reasonable to state that, like any other student, some deaf students demonstrate the same academic ability and high achievement that some hearing students demonstrate.

This study, although not designed for the purpose of identifying gifted deaf students, discovered that some characteristics of these students clearly indicate they are "academically gifted" or "high academic achievers." It was felt, for the sake of clarity, that the latter term is more appropriate and there are several reasons for this. First, the term gifted is highly overused in education today. Second, a student, either deaf or hearing, can be gifted in one area of accomplishment, but may not do well in another academic area. For example, a student may excel in the domain of music, but do very poorly in the domain of mathematics. Third, the use of IQ tests to determine the academic placement or achievement of a student is a poor indicator of the student's ability in light of recent research on intelligence, especially that of Gardner (1993) and others in the field of multi-intelligence and cognitive development. Finally, each student is an individual; the student's background characteristics, secondary education, socioeconomic status (SES), parental encouragement, and other factors all contribute in some way to their academic success.

Before going into a discussion of the research and its findings, it is important to understand the growth of postsecondary education for the deaf which, outside of Gallaudet University, has occurred over a relatively short span of time. There is also a need to understand the influence of mainstreaming, in elementary and secondary education, on postsecondary education. Finally, an understanding of the size of the population we are dealing with and some of the problems that support services have faced in meeting the needs of these students is important in forming a picture of the current situation.

Historical Background

To understand the growth of postsecondary education for deaf students, a brief background of the general growth of postsecondary education in the United States after World War II needs to be understood. Three major factors contributed to the rapid expansion of postsecondary education in the years following World War II. First, the federal legislation commonly known as the "G. I. Bill" provided postsecondary educational opportunities to students who might otherwise not have gone to college. Second, the creation and growth of community colleges, which started in the late 1940's and reached a peak in the late 1960's, created new opportunities for postsecondary education. Finally, the "baby boom" generation, the large number of sons and daughters of WW II veterans, swelled the enrollment of students to a record number in the 1960's. These three factors contributed to the massive expansion in postsecondary enrollment, staffing, and construction of new facilities. It is more than likely there will be a further expansion in postsecondary education as the influx from the current large elementary and secondary population reaches college age.

During this growth in postsecondary education another boost came in the form of societal changes in attitudes regarding college attendance. This centered on issues of college opportunities for children from low-income families, leading to increased financial support on the state and federal levels in a variety of forms (Stuckless & Frisina, 1976). Support ranged from the already low tuition available within the state university systems and in newly established community colleges, to direct loans and financial aid that allowed children from low-income families access to, and choice of, a postsecondary institution.

The societal movement also brought attention to the needs and aspirations of minority sectors of our society, including the needs of those who were deaf. It is well known that, in the early years of this nation's history, postsecondary educational opportunities for deaf people were virtually nonexistent. There were scattered examples of deaf individuals attending traditional colleges and universities in the 18th and 19th centuries; however, opportunities for postsecondary education for deaf students in the United States in significant numbers did not begin to occur until 1864 with the creation of the Columbia Institution for the Deaf, now known as Gallaudet University.

However, despite the size of the deaf population nationally, the creation of this specialized college did not result in large numbers of deaf students enrolling either there or in other postsecondary institutions. Part of the reason for this continuing small enrollment was that higher education was not widely considered appropriate for deaf people until well into the 20th century. Edward Miner Gallaudet, the first president of Gallaudet, wrote in 1893 that Gallaudet College could have doubled its enrollment at that time were it not for factors which included "the mistaken impression, more or less deeply seated in the minds of many instructors of the deaf, that higher education does not really promote the happiness of this class of persons" (Gallaudet, 1893, p. 2).

A survey, conducted by Bigman (1961) in 1955, of 1,857 institutions led to the estimate that there were only 65 deaf students in regular colleges and universities throughout the country. He estimated that between Gallaudet, which had 299 students in 1955, and all other postsecondary institutions, only 364 deaf students were enrolled in postsecondary institutions in the United States in 1955.

In 1965, 101 years after the founding of Gallaudet, Congress passed, and President Johnson signed into law, the bill establishing the National Technical Institute for the Deaf (NTID) as one of the nine colleges of Rochester Institute of Technology (RIT); this gave the country its second national postsecondary institution for deaf students. The first 70 students were enrolled in 1968; today, there are approximately 1,000 students enrolled at NTID.

The period of 1964 to 1970 saw a rapid growth of many other special regional and local postsecondary programs for deaf students. Today, the number of deaf students served by such programs is estimated to total around 5,500. However, it is noted that most of these programs have been established within existing two-year community colleges or vocational/technical institutions. In fact, Schroedel and Watson (1991) have reported that there is a predominance of two-year colleges over four-year colleges as host institutions for the 150 special postsecondary programs for deaf students which exist throughout the country today (Rawlings, Karchmer, DeCaro & Allen, 1991). Schroedel and Watson (1991) noted that, in 1985, "48% of the 140 programs were based at community colleges, 28% at universities, 13% at vocational-technical institutes and 10% at two-year or four-year liberal arts colleges." Therefore, it is seen that 71% of the special programs are based in two-year institutes. The reason for such a large number of deaf students in two-year programs is due partly to the open enrollment policies of these institutions, and partly to depressed academic performance among deaf high school students (Allen, 1994).

Influence of Mainstreaming

Although the establishment of these programs provided a wider choice for deaf students, access to the full range of colleges and universities in the United States was still limited. On the one hand, deaf students had a choice of attending established programs with adequate support services such as interpreters, notetakers and tutors, and often with specially designed curricula and instruction; on the other hand, if qualified, they could seek admission to regular colleges and universities of their choice, but with few or no special services in place to facilitate their academic success. Furthermore, from the information above, it is obvious that the number of special programs for deaf students in four-year colleges or universities was very limited. However, because of the influence of mainstreaming, more and more deaf students were opting for enrollment in regular four-year colleges and universities whether or not they had specially designed programs for deaf students, appropriate support services, or were devoid of services. To understand the reason for this shift in enrollment at the postsecondary level, we need to understand the influence of mainstreaming in the elementary and secondary levels of education.

Mainstreaming in Elementary and Secondary Education

Prior to the 1970's, most professionals considered special schools and classes to be the most appropriate placement option for students with severe disabilities. Such segregated schooling began to be questioned in the early 1960's and, by the 1970's, the concept of mainstreaming had moved to the forefront in the education of exceptional children. Supporters of mainstreaming believed that children with disabilities would benefit educationally by being placed in regular schools rather than in separate institutions (Winzer, 1993).

One of the agents for the transformation from segregated to integrated education was the passage of supportive legislation. Contemporaneous research indicated that four million out of seven million exceptional children were being inadequately served in separate institutions (Meadows, 1980). To address this inequity, PL 94-142, the Education for All Handicapped Children Act, was passed. A declining enrollment in residential schools for the deaf has been attributed to this law. While this decline really began before the law was passed, nevertheless PL 94-142 did have a powerful influence on the relative number of deaf students enrolled in schools for the deaf and in regular public schools. Today we are seeing even more powerful influences on schools for the deaf in the general form of governmental budget cutting; this is forcing states to reevaluate where deaf children will be taught.

Educators in the field of deaf education were aware that successful mainstreaming of deaf students required more than their mere placement in regular classrooms. Therefore, research focused on the relationship between successful mainstream placement and the degree of hearing loss, age at onset of loss, reading and language ability, and communication skills. Other factors such as race, sex, and economic status of the children were also investigated (Allen & Osborn, 1984; Karchmer & Trybus, 1977; Kluwin & Stinson, 1993; Moores & Kluwin, 1986; Northcott, 1971; Wolk, Karchmer, & Schildroth, 1982). All of this research focused on deaf students in elementary or secondary schools. However, we do not find any considerable amount of, or current, research on successful deaf students in regular postsecondary institutes, especially in regular four-year colleges or universities. What research there is on postsecondary education has been undertaken in special programs for deaf students.

Mainstreaming at the College Level

It needs to be taken into consideration that PL 94-142, while not directly applying to postsecondary education, has had an indirect impact on deaf students enrolling in regular postsecondary institutions in increasing numbers. Because a large number of them had been mainstreamed throughout elementary and secondary school, it was to be expected that many of them would decide to continue their education in a mainstream postsecondary setting rather than enroll in one of the special programs.

Another major factor in the increase in enrollment of deaf students in regular colleges and universities was the passage of Public Law 93-112: Section 504, better known as the Rehabilitation Act of 1973, and amended in 1974. This law provided federal guidelines and requirements regarding access to postsecondary educational institutions, including special services as needed, by individuals with disabilities. Also contributing to the increase in the enrollment of deaf students in regular colleges and universities was the fact that postsecondary institutions, faced with declining enrollments, were more willing to accept students with disabilities (Chickering & Chickering, 1978; Frankel & Sonnenberg, 1978; Gjerdingen, 1977; Hurwitz, 1983, 1991; Kirk & Gallaghan, 1981; Lane, 1976; Mandell & Fiscus, 1981; Opperman, 1993; Rawlings & King, 1986).

Even with expanded access to postsecondary institutions, and the fact that the Rehabilitation Act of 1973 required postsecondary institutions to provide special services for disabled students, in the early years following this ruling, deaf students were often reluctant to make their needs known to the faculty and administrators of these institutions. It was not uncommon for deaf students to refrain from indicating that they were hearing impaired on their applications, or even after they had been admitted to their college or university (Chickering & Chickering, 1978; Hallahan & Kauffman, 1978). As a result, students sometimes did not obtain the needed support services and struggled through their programs, missing much of the information their hearing classmates received. Although many of them did complete the course work and obtain their degrees, the process was much more difficult and time consuming.

It needs to be remembered that, unlike the provision of other services for disabled students such as the installation of a ramp, providing special services such as interpreting and notetaking for deaf students is an ongoing expense. The expense of providing these special services for deaf students in regular colleges was often borne fully by these institutions, whereas virtually all the special programs were supported with federal, state, or local public funding. However, it should be added that state vocational rehabilitation agencies often paid for some or all of the cost of services; in fact, they continue even today to provide financial support for many deaf students attending regular postsecondary institutions. In addition, many deaf students are enabled to further their postsecondary education through Social Security Insurance (SSI) benefits.

Providing Support Services

Although the passage of PL 93-112: Section 504 helped open regular colleges and universities to students with disabilities, deaf students faced two obstacles. The first was that, despite the law requiring postsecondary institutions to provide special services to disabled students, the institutions were ill-prepared to provide them with an appropriate range of services (Chickering & Chickering, 1978; Hallahan and Kauffman, 1978; Mandell & Fiscus, 1981; Menchel, 1978; Redden, 1979).

A related problem was that, even if the institutions were prepared to provide services, the influx of deaf students into regular institutions was not matched by a supply of individuals who could provide the needed services for these students. One reason for this shortage was that, while the number of deaf students in postsecondary institutions had been increasing, the training of staff required to provide adequate special services for them had not been keeping pace.

The shortage of interpreting services for the general public is also reflected in postsecondary institutions. Stuckless, Avery and Hurwitz (1989) note that "the demand for educational interpreting services currently exceeds the supply" (p. 2). This example of a shortage in one area may also extend to other areas of special services such as notetaking, tutoring, and counseling. Current research confirms that there is still a personnel problem in providing support services to deaf and hard of hearing students. A report by the National Center on Education Statistics (NCES) (1994) has stated that:

> About one in five (18 percent of the institutions that enrolled any deaf or hard of hearing students in the last four academic years) had been unable to provide one or more requested support services to deaf and hard of hearing students. Fourteen percent of the institutions that had enrolled any deaf or hard of hearing students in the last four academic years had been unable to provide sign language interpreters (p. 22).

This report stated that the reason these institutions could not meet the demand for interpreters was there were not enough qualified personnel to meet the needs of deaf or hard of hearing students.

Furthermore, although it is known that interaction in extracurricular activities is an important part of life for any student (Tinto, 1987), research indicates that, approximately 20 years after the Rehabilitation Act of 1973, deaf students still do not have the support services they need to participate fully in extracurricular activities (Green, 1990; Strong, Charlson & Gold, 1987; Hurwitz, 1992; Walter, 1989).

It is an amazing fact that, with the shortage of interpreters, untrained notetakers, and other barriers to their education, the deaf students who are enrolled in regular four-year colleges and universities have done as well as they have under often very taxing circumstances. Nevertheless, this research indicated that the students who participated in this study do not regret their decision to attend a regular postsecondary institute rather than a program for deaf students.

Number of Deaf Students in Regular Postsecondary Institutions

As stated earlier, there are a large number of deaf students in regular postsecondary institutions; however, the actual number of deaf students enrolled full time in regular four-year colleges and universities is uncertain. There are several explanations for the difficulty in identifying the actual number of deaf students in regular postsecondary institutions. All students who identify themselves as having a hearing impairment, even a mild hearing loss, are counted in most of these studies as being hearing impaired. The exact number of deaf students who actually fit the definition of deaf as defined in this research (70 dB) is open to question; therefore, any comparisons among the various studies are very tenuous. Also, because regular colleges and universities do not require students to identify themselves as having a hearing impairment, there are many deaf or hard of hearing students on college campuses who have not been identified.

Nevertheless, there are several studies that provide a close estimate of the number of deaf students enrolled in postsecondary institutes. In 1988, Rawlings, Karchmer, and DeCaro identified 157 postsecondary programs that provided services for approximately 7,500 deaf students. It was estimated that an additional 30 to 40% of deaf students were enrolled in other colleges and universities (Rawlings & King, 1986). Around the same time, data obtained from 447 colleges and universities by the Association for Handicapped Student Services Programs in Postsecondary Education, now known as the Association on Higher Education and Disability, (1987) led to an estimate that, beyond the 7,500 deaf students enrolled in the special postsecondary programs, approximately 3,000 - 4,000 deaf students were enrolled in regular two and four-year institutions in the United States. Walter (1992) estimated that there were an additional 3,000 deaf students enrolled in regular colleges and universities who were not listed in the guide published by Rawlings, et al. (1988). These various estimates suggest that, as of 1987, the total number of deaf students in postsecondary institutions in the United States was between 10,500 and 11,000. It was stated earlier that around 5,500 deaf students were in special programs. If we include Gallaudet University and NTID, it is then estimated that between 3,000 to 4,000 deaf students were enrolled in regular two and four-year postsecondary institutions.

The most current data available from the NCES (1994) indicates that 20,040 students, enrolled in two and four-year colleges and universities, have been identified by their postsecondary institutions as deaf or hard of hearing. It should be noted that the 2,500 deaf students enrolled at NTID and Gallaudet University are not included in this survey. Among the groups identified by the NCES, 4,520 students were deaf, 7,770 were hard of hearing, and 7,750 were hearing-impaired students whose actual levels of hearing loss were unknown. If we assume that 50% of the last group are deaf, then the total number of deaf students rises to 8,395. Adding the 2,500 students at Gallaudet and NTID to this number yields a total of 10,895 which is very close to the independent estimate of 10,500-11,000 discussed earlier. Even in the NCES study, it should be noted that the number of deaf students is only estimated; the institutes reported only those students who have identified themselves as being deaf, hard of hearing, or having a hearing impairment. Students who preferred not to identify themselves or ask for support services may not have been counted.

Several other independent estimates suggest there are at least 3,000 deaf students enrolled full time in regular two and four-year colleges and universities. However, how many of these students are enrolled full time in four-year colleges or universities remains conjectural.

METHODOLOGY AND DEFINITION OF TERMS

Methodology

The foundation of the research methodology used in this study is based on the importance of *working with* the research participants as *informants* rather than *subjects*. Spradley (1979) stated:

> Informants are a source of information; literally, they become teachers for the ethnographer .... Investigators are not primarily interested in discovering the cultural knowledge of the subjects; they seek to confirm or disconfirm a specific hypothesis by studying the subject's response. Work with the subject begins with preconceived ideas; work with informants begins with a naive ignorance. Subjects do not define what it is important for the investigator to find out; informants do (p. 25, 29).

Criteria for Selection of Students

The students selected for this study met the following criteria: (1) had a hearing loss of 70 dB or greater as measured in the better ear; (2) were sophomores or above in college; (3) were enrolled full time in four-year, accredited, undergraduate institutions within the New England region; and (4) were willing to participate in the study on a voluntary basis.

The reason for setting the criterion for the students to be in their sophomore class or above, was that by the sophomore year a student is less likely to drop out of college. Also, by the sophomore year, students have or have not developed friendships with their peers, are either participating or not participating in extracurricular activities, have made the adjustments to college life, have become comfortable with the college environment in general, and are able to evaluate their decision in terms of their satisfaction or dissatisfaction. Thus, by setting this criterion, the students in this study are fairly stable in their views and likely to persist to graduation, even if faced with difficulties, either of an academic or social kind.

No more than three students were interviewed at any one college or university in order to include as large a number of four-year postsecondary institutions as possible in the study. Each student was a voluntary participant in the study.

Criteria for Selection of Institutions

The institutions from which the student participants were selected met the following criteria: (1) did not have a program specifically designed for deaf students; (2) had fewer than 15 full-time deaf students enrolled; (3) did not have a coordinator of services for deaf students who devotes a minimum of 25% of his or her time to directing the program; (4) had an office or person responsible for disabled students services; and (5) were located within the New England region. Eighteen institutions, comprised of four-year colleges, and state and private universities, were selected on the basis of these criteria.

Inclusion of Service Providers

The coordinators of services for disabled students in these institutions were informed in an initial contact letter that the researcher also wished to interview them, during my visit to their campuses, in order to obtain their perspectives regarding the quality and adequacy of special services for deaf students. Upon confirmation of an interview appointment with a deaf student at each institution, an appointment was also arranged with the coordinator.

Locating the Students

Several methods were used to locate student informants:

First, letters were sent to members of the Association on Higher Education and Disability (AHEAD) who were located at institutions within the New England region. These letters were also sent to the offices of disabled student services of institutions in the New England region who were not affiliated with AHEAD. The letter stated the purpose of the research, inquired if any deaf students were attending their institution, if there were less than 15 deaf students, and asked if they would put the investigator in contact with these students through their office.

After confirmation that there were deaf students at these institutions, a "Dear Student" letter was sent to the institutions' coordinators to pass on to the appropriate students. The letter explained how the investigator obtained their names, the purpose of this research, and a request for permission to contact them directly to arrange an interview if they were willing to participate.

Second, contacts were made with deaf students attending colleges in the Boston area, with the understanding that they might be able to identify other deaf college students in the New England region.

Third, interpreters were asked if they were interpreting for other deaf students at institutions in this region. To protect the interpreters' code of ethics, no names were requested, but the interpreters were asked to inform the students of the research through a letter that was provided.

Fourth, assistance from the A. G. Bell Association for the Deaf was used to identify deaf students who had applied for scholarships over the past five years and were in four-year postsecondary institutions in the New England region. A letter was sent directly to the students explaining how the investigator obtained their name and the nature of this research. The letter was similar to the "Dear Student" letter sent to the service providers.

Through these methods, 80 deaf students from 32 four-year postsecondary institutions were identified. From this group, 33 students from 18 institutions were qualified and willing to participate in the study. The other students did not participate because: (a) they did not meet one or more of the criteria, e.g., they were freshman, or did not have a 70 dB or greater hearing loss; (b) they did not wish to participate in the study; or (c) the pre-determined criteria limited the number of deaf students being interviewed at each institution to three in order to provide a better cross section of students for the study from a variety of different kinds of postsecondary institutions.

Types of Postsecondary Institutions Attended

The students were enrolled full time in 18 different institutions, of which nine were private and nine were public. These 18 institutions had a total enrollment of 66 deaf students. The median was 3 with a range of 1 to 14 students. One large public university had 10 deaf students, and a small private college reported 14 deaf students. Two colleges, both of them small private institutions, had only one deaf student each.

The Interview

Introduction to the Interview

Prior to the interview, an informal meeting was arranged with the researcher and the student in an informal setting, such as in the lounge over coffee. Rapport was developed between the student and the researcher prior to the interview by sharing of experiences as deaf students and answering any questions they had.

The Interview Process

Audiotapes were used to record the interviews and interpreters were used during the interviews when necessary as a deaf person's voice does not always register well on audiotape; thus, the interpreter would voice for the student when necessary. The use of an interpreter also insured that valuable information given by each informant was not lost, and that probing questions could be asked for clarification.

An student interview *guide* (Appendix A), a service provider interview *guide* (Appendix B) and a demographic data sheet (Appendix C) were used during the interview. The interviews were structured so that each part of the interview referred to one of the specific questions which guided this research. During the interviews, interviewing techniques including reconstruction, open ended questions, reinforcement of responses, and probing were utilized (Bogdan & Biklen, 1982; Mishler, 1986; Seidman, 1991).

There were some variations from a typical interview in this research study. In a typical recorded interview, the researcher employs an audiotape recorder to record the interviewer's and the informant's voices. In this research, however, since both the student and the researcher were deaf, it could not be assumed that the quality of our recorded voices would be intelligible when played back on tape.

Therefore, in additional to voicing for the deaf person when applicable, it was also necessary to have an interpreter present for most sessions in the event that the informant or the researcher had difficulty understanding each other from speechreading alone. These variations from the typical interview led to several problems and several strategies were employed to overcome these problems; nevertheless, some information may have been lost.

Analyzing the Data

Transcribing and Coding the Data

The interviews were transcribed verbatim, with no grammatical corrections, and entered into a data base. The interviews were coded and analyzed following a series of qualitative methods in common use (Agar, 1980; Bogdan & Taylor, 1975; Mishler, 1986; Marshall & Rossman, 1989; Patton, 1978, 1990; Spradley, 1979). Coding was derived to obtain recurring patterns and themes for each research question.

Background Information

The demographic data (Appendix C) provided information on each student's degree of hearing loss, age at onset of the hearing loss, and the student's description of his/her hearing loss. The mean and range of the students' hearing losses were determined and the students were grouped by severity and age at onset of their hearing loss. The SES of the family was indicated by the family income and education of the parents. The families were grouped by family income and parents' education. The students' pre-college experiences were defined by their mainstreaming experiences as indicated in their interviews and the information on the demographic data sheet, by their GPA's, and by their Scholastic Aptitude Test (SAT) scores, including the mathematics and verbal test scores. Finally, the number of students who used support services in high school was noted.

Interview Data

Within the context of the interviews, the analysis sought recurring patterns in relation to the questions which guided this research. Data analysis was ongoing as the data were collected, through reflection, discussion, and memo writing. This ongoing activity helped direct the focus of the analysis when the transcribed interviews were coded for recurring patterns.

The intent of the analysis of the interview data was not to interpret what the students were saying, but to form a narrative summary of the students' responses which would allow the "voices" of the students to describe their own experiences. A procedure described by Seidman (1991) was followed which allowed the interview transcripts to be marked, reduced, and shaped into a form which could be reported in the context of the research so others could share and understand the experience of the students. Profiles of the students' experiences were formed through this method.

It was not possible to put all of the students' or service providers' "voices" in the final research report. Instead, a sample of the responses showing similar trends throughout particular sections of the interviews was utilized.

Definition of Terms

For the purposes of this research the following selected terms are defined:

Deaf: The most common definitions of deafness are based on the degree of hearing loss as measured in decibels (dB) of pure-tone sounds necessary to hear across the 500-2000 cycles per second frequency range of speech, usually reported for the ear with the better hearing (Stuckless, 1987, pp. 368-9). For the purpose of this investigation, students with a loss at or beyond 70 decibels (dB) are considered deaf.

Interpreting/Interpreters: The use of a skilled intermediary to facilitate communication between hearing individuals and deaf individuals through the use of sign language and/or speech. As used in this research the term can refer to sign language, oral, or simultaneous interpreting.

Mainstreaming: The term "mainstreaming" came into being in the late 1960's when leaders in special education began to question the efficacy of residential or special class placement of handicapped children. In elementary and secondary education, mainstreaming means that a deaf student is placed full or part time in a regular classroom with hearing peers. Appropriate support services are provided for the student in the classroom, and resource rooms and other extra assistance are available for the student as needed.

All the students interviewed for this research were mainstreamed with hearing peers in a regular college setting and their support services vary. The literature review will also discuss deaf students in special programs who are mainstreamed with hearing peers, again with support services. The significance of the special program for these students includes the following: (a) support services tend to be more extensive than for the deaf students mainstreamed in regular colleges; and (b) there is an opportunity for social interaction with fellow deaf students.

Regular Colleges and Universities: These are accredited four-year undergraduate institutions, with or without graduate offerings, that do not include a special program for deaf students as defined below.

Special Programs: The 150 postsecondary institutions listed in Colleges and Careers for Deaf Students (Rawlings, et al., 1991) share the following criteria: (1) an academic unit specifically designed for deaf students; (2) an enrollment of 15 or more full-time deaf students; and (3) a coordinator who devotes a minimum of 25% of his or her time to directing the activities of the unit. Programs such as those at the National Technical Institute for the Deaf and Gallaudet University together serve more than 3,000 deaf students; most others serve between 15 and 100 deaf students.

Service Providers: As used here, this term applies to personnel who are in charge of providing support service to disabled students enrolled in regular four-year postsecondary institutions. They act in an administrative, supervisory role over persons who provide direct services to students, such as interpreters and notetakers.

Support Services: Services that are provided to deaf students in postsecondary institutions, such as interpreting, notetaking, tutoring, provision of speech amplification systems, reserved seating in classes, and other special provisions offered to deaf students in the academic and social environments within postsecondary institutions.

STATEMENT OF THE PROBLEM, THE PILOT STUDY AND RESEARCH QUESTIONS

Statement of the Problem

It is obvious from the data that more than 10,000 deaf students are presently enrolled in two and four-year colleges and universities in the United States. Because of their special needs, some of these deaf students choose to attend postsecondary programs for deaf students such as Gallaudet University or the National Technical Institute for the Deaf (NTID), or smaller programs that have been established throughout the country within local community colleges or four-year institutions. Other deaf students choose to attend regular postsecondary institutions where support services may or may not be available to meet their special needs. The number of deaf students whose choice is to attend regular colleges and universities appears to be larger than expected and may still be underestimated due to the inability to identify all deaf students who are enrolled at these institutes. Another factor that contributes to the uncertainty of the number of deaf students enrolled in regular four-year colleges and universities is the tendency to lump students with different degrees of hearing loss into a single category labeled "hearing-impaired."

The number of deaf students who will be attending regular postsecondary institutes perhaps will increase over the next decade. Several factors are indicative of projected growth: the influence of mainstreaming; the increased frequency of open door policies on the part of regular four-year colleges and universities to admitting handicapped students; the decline in the college age pool of students making institutions more willing to accept students they would not have accepted before; the increase in older students, some who will be deaf, returning to college for retraining or because of career change; and the increasing number of deaf students who are interested in a postsecondary education. Moreover, with the decrease in federal funding for special programs and the office of vocational rehabilitation, there is a possibility that more deaf students will be enrolled in postsecondary institutes near their home or within their home state rather than sent to special programs such as NTID or Gallaudet.

Although there is a large number of deaf students in regular colleges and universities, less was and is known about these students than about deaf students who enroll in the special two and four-year programs. The little that is known is more than 25 years old, and perhaps not applicable to the current situation in postsecondary education. The original purpose of this study was to gather information about salient characteristics of deaf students who enroll in regular four-year colleges and universities, why they choose these colleges over special programs, how they function in these environments, and the adequacy of the support services being provided to them in the regular college setting.

The information that has been obtained through this investigation should help deaf students, their parents, teachers, and high school counselors to better understand what is involved in a deaf high school student's decision to apply for enrollment in a regular four-year institution. This information should also be helpful to service providers and administrators in regular colleges and universities by providing a better understanding of the special needs of deaf students and how these needs can be met through careful planning for, and provision of, needed services.

In addition, during the course of the study, it became obvious that certain background characteristics began to emerge that were common among the deaf students who participated in this research. These characteristics will be described within the contents of this paper and may be useful for identification of deaf students who have potential for high academic achievement.

A Pilot Study

Prior to initiating the present investigation, the researcher conducted a pilot study (Menchel, 1993). The most important fact to come out of this initial research was the finding of the degree of deafness of these students. Prior to undertaking the pilot study, it was assumed that most hearing impaired students who were enrolled in regular four-year postsecondary institutes were either hard of hearing or had a mild hearing loss. It was not foreseen that profoundly deaf students would be found among this population. The fact that all eight participants in the pilot study were profoundly deaf with a hearing loss of 90 dB or greater was an important finding and a major reason to widen the research to a larger group of participants.

Research Questions

This study as originally designed was guided by four questions.

1. Why do some deaf students decide to attend a regular college or university instead of a special program?
2. After a year or more of enrollment in a regular college or university, what reasons do these students give for being satisfied or dissatisfied with their decision?
3. How do they describe their academic and social experiences in college and what, if any, adaptive strategies have they developed in relation to their deafness?
4. How do their descriptions of the quality and adequacy of support services match or differ from the descriptions provided by the service providers in their colleges?

BACKGROUND OF DEAF STUDENT PARTICIPANTS AND A COMPOSITE STUDENT PROFILE

In the following section, the background data of the participating students is presented. It was noticed during the data analysis that similar patterns began to emerge among the participants. It was a striking fact that almost all of the students who participated in this study share all, or most, of the characteristics given here. This pattern led the researcher to classify them as high academic achievers. These characteristics could conceivably be used as predictors of potential academic success; furthermore, they can help counselors, secondary school teachers, and parents to identify and encourage academic development of these deaf students for a postsecondary education.

Vital Information

First, it is important to state vital information about these students and some of the similarities that were found among the participants.

Thirty-three deaf students enrolled at colleges and universities within the New England region participated in this study. All were Caucasian, except one student who was Hispanic, and all were single. Of the 33 students, 16 were in their sophomore year, 4 were in their junior year, and the remaining 13 were in their senior year. Ten of the students were male and 23 were female. The mean age of the students was 22 years (*SD* 3.02) with a range from 19 to 30 years of age. The oldest student in the sample had been out of college for several years before deciding to return full time to obtain an undergraduate degree. Of the 33 sets of parents of these students, 2 sets of parents were deaf.

Hearing Loss, Age at Onset and Description of Loss

Hearing Loss and Age at Onset

The distribution of the students' hearing losses in decibels (dB) as measured in the unaided better ear is as follows: one student had a moderate hearing loss of 70 dB, 5 students had severe hearing losses between 80 and 89 dB, and 27 had profound hearing losses of 90 dB or greater. Their mean hearing loss was 95 dB (*SD* 9.57) with a range of 70 to 110 dB. This is comparable to the degree of hearing loss that is found in the population at NTID and Gallaudet.

With regard to their ages at onset of deafness, 20 students reported that they were born deaf, 9 became deaf at age 4 or under, 2 became deaf at 18 years of age or older, and 2 reported that their deafness was progressive.

Students' Description of Their Hearing Loss

When the students were asked how they described themselves in terms of their hearing loss, 26 said they identified themselves as "deaf," 6 identified themselves as "hard of hearing," and 1 student used the term "hearing impaired." When questioned about using the term "hard of hearing" or "hearing impaired," one student quite strongly maintained that, even though she had a hearing loss of 90 dB, she was not deaf; instead, she considered herself hearing impaired as illustrated in the following quotation from her interview:

> No. I'm not deaf. I do not refer to myself as deaf. I am hearing impaired and I refer to myself as hearing impaired because I am able to hear everybody. I may not get everything 100% of the time, but I wear a hearing aid and if I can be helped by a hearing aid and I can hear you, I'm not deaf. I'm not deaf. I'm not deaf. If I can use a hearing aid, and I can hear people. .... I do not consider myself deaf. My friends do not consider me deaf. My teachers do not consider me deaf. Alexander Graham Bell Association does not consider me deaf. A lot of people are always surprised to find out that I wear a hearing aid. .... I think there's a

> distinction between being deaf and being hearing impaired. A deaf person cannot make a phone call. A deaf person cannot hear a bird.

Although this student is prelingually, profoundly deaf, one needs to respect the identification that individual students prefer. None of the students said they were trying to conceal their deafness; some simply said they did not feel comfortable using the term "deaf" when they saw themselves functioning more as a hard of hearing person than as a profoundly deaf person. Some said also that they identified themselves as either hard of hearing or hearing impaired and, since they did not know or use sign language, they did not see themselves as deaf in the sense of communication.

Oral and Sign Communication

Elementary and High School

Thirty-two of the 33 deaf students indicated they used speech and speechreading as their primary mode of communication throughout elementary and high school. Twenty-nine of the 33 students did not know or use any sign language prior to college. Four of these students reported that they also used a form of signing in elementary and high school, and used sign interpreters in class.

College

It was noted that all of the 33 students were wearing hearing aids during the interview. They indicated a dependence, at least in part, on amplification systems and the use of their hearing aids for communication inside and outside of the classroom. The fact that all of the students wore hearing aids is surprising. While statistics on the use of hearing aids by students across postsecondary special programs are not available, it is unlikely that the percentage exceeds 50%.

As previously stated, four students entered college with signing skills. Ten others were either learning or using sign language when the investigator met them for the interviews. The reasons these students gave for learning sign language included: (a) it was easier to follow a sign language interpreter in class than try and obtain information totally from speechreading; (b) the student may have developed a relationship with another deaf student who uses sign language; and (c) due to the change in attitudes toward sign language, they felt that there was no longer any stigma attached to using it and were free to express themselves as deaf people using this form of communication.

Socioeconomic Status of Their Families

The students were asked about their family income and parents' education. The results were as follows:

Family Income

The income of the families was distributed as follows: four families had incomes of less than $50,000, nine families were between $51,000 and $70,000, nine families were between $71,000 and $110,000, seven families had incomes of between $111,000 and $150,000, and three families had incomes greater than $150,000. One student was unable to furnish information on family income as he/she no longer had family contact. The fact that, of the 33 students' families, 19 had incomes equal to or greater than $71,000 indicates that there is a tendency for these students to come from upper middle and upper SES families.

Education of the Parents

In general, their parents were very well educated as the following distribution indicates: within eleven families, one or both parents had a doctoral degree; there were eight sets of parents where one or both parents had a master's degree; ten sets of parents consisted of one or both parents having a bachelor's degree; and there were four sets of parents where neither parent had an education beyond high school.

The upper SES of most of these families probably enabled these parents to provide more material advantages for their children than would be found in lower or middle SES families. Of the 33 deaf students, 6 went to private elementary schools and 8 went to private non-sectarian or Catholic high schools. Three of the students attended private schools for the deaf prior to entering a regular mainstreamed public high school.

Pre-College Education

Mainstreaming Experiences

Twenty-eight of the students had been mainstreamed in public or private schools for their entire elementary and secondary education. Three had attended an oral school for the deaf for their elementary education and then were mainstreamed into regular high schools. One student had attended a residential school for the deaf for both elementary and secondary school where signing was used in and outside of the classroom, and one student went to a special program for deaf children in a regular elementary school where an interpreter used sign language in the classroom.

High School GPA Scores

The students' GPA's in high school were well above average. Thirty-one of the students had GPA's of 3.00 or higher, and two students had GPA's between 2.00 and 2.93. Their mean GPA was 3.56 (*SD* 0.357) with a range of 2.43 to 4.00. Twenty-eight of the students reported having taken honor and advanced placement courses in high school, and they were all enrolled in college preparation courses. All of the students were accepted by at least 75% of the colleges to which they applied. Eight of the 33 students used early decision selection to enroll at the college of their choice; these eight students applied to only one college or university without considering any other institutions.

College Entrance Scores (SAT's)

The students had a mean combined mathematics and verbal SAT test score of 1120 (*SD* 232.48) with a range of 700 to 1450. Their mean verbal test score was 551 (*SD* 113.9) with a range of 340 to 710. Their mean mathematics test score was 593 (*SD* 134.5) with a range of 340 to a perfect 800. Considering the fact that the average combined SAT score for the four-year college entering class nationally in 1993 was 903 (Statistical Abstract of the United States, 1994), and also considering the fact that this score has not changed much over the past three years, these students have an average SAT score considerably above the national average.

Use of Interpreting and Notetaking Services

Twenty-nine students said they did not use the service of either an oral or sign language interpreter in either elementary or high school. Of the four students who said they had used a sign language interpreter in both their elementary and secondary school classrooms, three students said they used Signed English interpreting; one student used American Sign Language (ASL) interpreting; and one student used a Cued Speech interpreter for high school.

Seven students said they had used notetakers in high school, while the other 26 students said they either took their own notes or borrowed notes from a friend.

Fondness for Reading

When asked if they enjoyed reading, all of the students reported that they had been reading since they were young and still love to read:

> All my life, I always read books. When I was a young kid, when I first started going to school in ______ I had a very hard time. I didn't make very many friends. I was miserable. Kids made fun of me. And I think as a consequence I was lonely so what I did was I read. I still read an awful lot because you can read and you don't need anybody else for that. And the hearing doesn't matter.
>
> Like, last summer, I read a lot. I usually read a lot of books over the summer. I can't even remember what I read. I just .... I read weird stuff. Like, I'll read novels, I read magazines. I read Business Week, Time, Fortune, Forbes. I mean, I've found that deaf people .... deaf people who've done well, they .... one thing they have in common is that they like to read, it's been a great experience.
>
> I read the New York Times every morning. I eat breakfast in the cafeteria. I sit by myself and I read the paper. I read the sports and it's a good experience to understand what's going on in the world--with NAFTA with Mexico, what's going on in Russia, what's going on in Japan. I like to know what's going on out there. And I can't hear, I can't rely on hearing, so I have to read what's going on out there.

Their fondness for reading may be an additional factor in the academic success of these students. This fondness for reading was found across all of the students participating in this study. It has also been noted that deaf students who have better academic performance usually have a reading level above that of the general population of deaf students. Their enjoyment of reading is probably linked to their college grades and to their verbal scores on the SAT, which are much higher than reported elsewhere (Walter, 1969) for deaf students graduating from high school.

Working Experiences During High School

The fact that 30 of the 33 students also said that they worked during the summer and/or after school, some since the start of high school, is an interesting observation. Their work experiences may have contributed to the self confidence expressed by many of these students in their interviews.

Using the data above it was possible to put together a composite student profile of the typical deaf student in this study.

A Composite Student Profile

The student is 22 years old, Caucasian, single, and female. She is a full-time, undergraduate student, living on campus, with a B academic average, and in her junior year. She was born deaf and has a 95 dB hearing loss in her better ear. She has good speech and a good command of English, and regularly wears a hearing aid. She also uses an FM system in the classroom. While her main mode of communication is speech and speechreading, the chances are about even that she uses, or is learning, some sign language. She considers herself "deaf" rather than "hearing impaired" or "hard or hearing." She is comfortable with her deafness and takes pride in what she has achieved. She is highly motivated and had set goals for a college education early in high school. She doesn't see her enrollment in a regular college as anything out of the ordinary.

She has loved to read since she was a young child and continues to read for pleasure in college as time permits. In high school, she held a full- or part-time job during the summer and continues to work during the summer to help pay some of her college expenses.

Her parents are both hearing. Both are college educated and one of them holds a graduate degree. They are employed in professional occupations and have an income around $90,000. She has lived in a middle class suburban neighborhood since she was born. She has had considerable parental support and encouragement in whatever undertaking she has attempted, including her enrollment in a regular four-year college.

Her entire elementary and secondary education was in mainstream settings where she had support and encouragement from her teachers. Her grade point average in high school was 3.5 on a four point scale. While in elementary and high school, she used neither an interpreter nor a notetaker; instead, she either took her own notes or borrowed her friends' notes when she was unable to take her own. She had speech therapy throughout elementary school and through her sophomore year of high school when she dropped it. She was enrolled in a college preparatory track and took honors/advanced placement courses. Her Scholastic Aptitude Test (SAT) scores were 551 verbal and 593 mathematics, giving her a total score of 1144. While in high school she had a small group of friends, all hearing, and was active in at least one extracurricular program. She applied to four colleges and was accepted by three, one of them being the college of her first choice. She made her decision to enroll in her present college after visiting the college and feeling comfortable that it would be able to provide the support services she needed. While she does not perceive herself as such, due to her high SAT scores and GPA in high school, she would be classified as an high academic achiever.

Discussion of the Profile

We need to be careful and not assume that this profile fits all deaf students in regular postsecondary institutes. None of the interviewed students precisely fit this profile. For example, 30% of the students who participated in this study were male. Three of the students were graduates of schools for the deaf, and two of the sets of parents were deaf. Not all of the students came from highly educated or upper SES families. Nor did all of them use speech and speechreading as their main mode of communication in high school.

While we must be cautious in generalizing beyond this group of students, the data suggest that education and economic levels of the family, and the use of speech and speechreading, are related to successful mainstreaming at the elementary and secondary levels. This in turn probably contributes to the deaf student's choice of a regular college for his/her undergraduate education.

The histories of hearing loss among the interviewed students appear to be relatively similar to those of deaf students reported elsewhere. Twenty-seven of these students had hearing losses in excess of 90 dB, and their mean hearing loss was 95 dB, well within the profound range. As a comparison, the mean hearing loss of students who entered one major postsecondary program for deaf students in 1994 similarly was 95 dB (Annual Report of the National Technical Institute for the Deaf, 1994). Also, like students in special postsecondary programs, a substantial majority of these students were either congenitally deaf or became deaf prior to entering school.

The Scholastic Aptitude Test (SAT) scores of the students in this study compare favorably with the norms for most hearing students entering college, whose national average in 1993 was a verbal score of 424, and a mathematics score of 478, for a total SAT score of 902 (Statistical Abstract of the United States, 1994). These scores in turn are dramatically above the scores of most deaf students entering special postsecondary programs (Walter, 1969) who reported a mean of 281 verbal score and a mean of 392 for the mathematics score. This resulted in a mean SAT score of 673. This is not to suggest that similarly gifted deaf students do not enroll in four-year colleges which offer special programs for deaf students. Undoubtedly many do, but not in the same concentration as the students interviewed for this study. Nor should it be inferred that all, or even most, deaf students enrolled in other regular four-year colleges and universities exhibited similar academic profiles; however, again, many likely do.

DISCUSSION OF THE RESEARCH FINDINGS

Decision to Attend a Regular College or University

Students expressed three main reasons for enrolling in a regular college or university rather than in a college or university which featured a special postsecondary program.

First, most of these students had become accustomed to being mainstreamed throughout their entire elementary and secondary education and felt comfortable continuing in a "hearing" educational environment. They did not see themselves as belonging in a special program where there would be a large number of deaf students, an environment with which they were not familiar.

> No, because I don't sign, and they are primarily signing. I've been brought up in a hearing world. All my friends have been hearing; my family is hearing. And I just feel like I would have felt very out of place and I didn't feel that there was a need for me to when I can function fine in a regular environment.
>
> The reason that I decided to go to _______ rather than another college such as one with specific assistance or a deaf school is because I am much more comfortable in the hearing world.
>
> I actually did consider going to the college for the deaf, but I didn't really seriously consider it as if it would be a realistic possibility for me. Since I was mainstreamed all my life, I wanted to keep on going with a mainstream college.

Second, they felt they would not be academically challenged in a special program, even if their classmates were hearing students. Their high schools prepared them well for postsecondary education, many of them having experienced advanced placement or honors courses, and they felt they would be academically ahead of their deaf peers in a special program and would not find their courses challenging.

> The services--they weren't like Gallaudet or RIT--but I felt they were adequate and mainly the big thing was I liked the environment. I liked the school. I picked _______ because it was one of the best schools. I almost felt I had to go there. I did very well on the SATs, I was a National Merit, and did well in classes. It was almost expected of me to go there.

Third, they saw their prospects in graduate education and in their future careers being better if they graduated from a "name" college. The indications were that students interpret "name" in a variety of ways, even within this sample. They were, however, more uniform in picturing special programs as under challenging.

> Because if you were a big law firm employer in Los Angeles, would you be more impressed with a degree from ________ College or would you be more impressed with a degree from Gallaudet University? I tend to think at this point, or in the near future, that the guy will be more impressed with the degree from ________, which is the reason why I decided to come to a regular college, as opposed to a college for the deaf.

> I knew my social life at NTID would not be like real life. Maybe there would be some connections to the deaf community, but if I went somewhere like _______, then I'd meet like the Prime Minister of Canada's daughter or the President of Nigeria's daughter. Those are the kind of connections. This is real life.

These students' colleges ranged from large state universities to small private colleges, and they were enrolled in a wide array of majors. The reasons that these deaf students gave for selecting their particular college or university were probably similar to those of other students, including financial considerations, an attractive program, far enough away from home but not too far, liking the environment, or having a relative or friend who attended the same college.

There was no indication from most of the students that they selected these particular colleges or universities because they knew there were other deaf students already on campus. More often than not, when there were several deaf students on the campus, they did not know each other or have a particular interest in establishing contact. Each student had his or her own group of friends and, if there were other deaf students within that group, this happened more by chance than by intention.

There were exceptions, however. A small number of deaf students did make contact with other deaf students, either at their own institutions or at other institutions where they were aware of their presence. Some established contact with deaf students on other campuses through the use of the Internet; this was demonstrated by the sharing of Internet addresses with each other. It appears that they developed a network of friends among themselves through the use of E-mail.

Parenthetically, of the 33 students, 31 made no effort to establish contact with the deaf community where their college or university was located. The two exceptions established only limited contact.

For most of these students, their decision to attend a particular postsecondary institution was based in part on whether or not the institution would provide needed support services. These students were aware of the need for support services in college, and some had already become accustomed to their use in high school. For some of the students, it was as simple as having appropriate seating or sharing the notes of a fellow student. For others, there was a need for a wider range of services including the use of interpreters, FM systems, notetakers and tutoring. Some students found that prospective institutions were not prepared to provide the needed services or did not provide them with satisfactory assurances, leading them to decide not to enroll in a particular college or university based solely on the fact that they would not have the support services they needed.

> _______ I rejected because the handicapped program was really terrible there. When I visited _______ and spoke to the people there they said that they could not provide me with the support services I needed. When the swimming coach at _______ heard about this he was furious because he wanted me on the team. He wrote a letter to the president of the university, but I had already decided to come to _______.

> It was hard. My mom had to fight. She had to get them to agree to give me the notetakers, stuff like that. Because I was one of the first to go there. I didn't think about those things. I was thinking, '_______ very challenging, a very rigorous environment.' I didn't think about

> notetakers. Basically I wanted to go to the best, to one of the best schools in the country and learn. But yes, notetakers were important to me.
>
> _______, I didn't want to go there because it's a very small group. I know it's an excellent education. I know it's a good school, but they wouldn't have interpreters.
>
> In a way, in a way, because I knew that the resources here were very good. And I had talked to ______, who is the head of the Learning Assistance Center, where they have the notetakers and Phonic Ear, anything that you need. And I knew the resources were very good and they seemed very helpful and reliable in supporting my hearing loss. So I think it was a factor in a way , because I was looking for a school where they accepted disabilities and they accepted, like, people who had handicaps and needed resources.

Satisfaction With Decision to Attend a Regular College or University

Whether hearing or deaf, a large proportion of college students who withdraw from college do so during, or on completion of, their freshman year (Foster & Walter, 1992; Tinto, 1987). If the research had included interviews with deaf students who had withdrawn from regular four-year colleges and universities, these interviews would probably have disclosed numerous sources of dissatisfaction on the part of deaf students. As indicated in the review of the literature, Foster and Elliot (1986) interviewed deaf students who had transferred from regular two and four-year colleges to a postsecondary institution which included a special program and a large enrollment of deaf students. Complaints of the transferring students included dissatisfaction with teachers, support services, the college environment, and its social life.

> I'm really, really glad that I decided to come here. I've made some really good friends. The people at the school are really what determined my decision to come here. The people here are the kind of people that I would want to know. The atmosphere of the school is very friendly. The people seem very receptive to others. And, as far as the programs of the school, I found that whenever I need any kind of assistance, I receive it in any way, shape or form.

However, all of the students participating in this study were returning students. Sixteen were in their sophomore year, four were in their junior year, and the remaining thirteen were in their senior year. When questioned, all of the students indicated they were satisfied with their decision to attend a regular college or university. None of them regretted the decision or wished he or she had attended a special program.

The fact that these students have continued to stay in college supports the belief that they were not only well prepared academically and had the reading ability to handle college work, but also that they had made an adjustment to college life. Nevertheless, numerous students were dissatisfied with some aspects of their support services.

> Yes, I think I am very satisfied with my decision. I think I've grown a lot, I've participated more now. I am group coordinator and President of my Amnesty International chapter, I'm very articulate. I work a lot with the faculty and the alumni and the students. I work in groups a lot. I'm very vocal and I get a lot done. Yes, I'm very satisfied now. I've grown a lot and I'm very satisfied now about my performance and how I'm interacting with people.

It was reported elsewhere (Kluwin & Stinson, 1993) that deaf students who have a positive mainstreaming experience in high school are more likely to enroll in a regular college or university than are students who have a negative mainstreaming experience. It would be expected from the literature (Antia, 1984; Foster & Elliot, 1986; Gresham, 1986) that deaf students who had a negative mainstreaming experience as evidenced by feelings of loneliness and isolation, difficulty understanding the teachers, and feelings of being left out of the social activities of their high school, would be those most likely to enroll in a special program.

Yet, in the course of this study, several deaf students had expressed feelings of isolation when talking about their high school years in mainstream settings. These students had the option to attend a special postsecondary program for deaf students where they would have had deaf peers and all the support they needed; yet, they still chose to attend a regular college. These students gave several reasons for not selecting a special program.

First, they perceived that they would have a clean slate in college; i.e., be in a new environment where nobody knew them. They could work on having a more positive experience in college than they had in high school. In other words, they chose to become proactive and integrate themselves into the academic and social activities of their institutions.

> I'm a junior now, so I've been here for a little over two years. I've had a very positive experience here. I've had my ups and downs just like everyone else, When I came to college, I felt good about the fact that I had a clean slate. I could start all over and just be myself and, like I talked about high school, people pretty much have a pre-conceived idea of who you are, and especially when you're in a big high school. So I wanted to get over that when I came to college and be able to be myself, to show people who I am. And fortunately I've been able to do that.
>
> So when I got to ________ I decided that I was going to tell people that I was deaf, and people knew who I was. They knew that I was different in some way. And people saw me signing and they said, 'Oh, tell me the sign for this or for that.' A lot of people wanted to learn to sign, so we set up a club, a sign club, and we were all learning to sign at the same time. So it really helped me become more of a leader.

Second, like the other deaf students interviewed, these students were mainstreamed from an early age and thus may have seen themselves as "belonging" in a regular college environment rather than a special program. *Third*, these students also wanted to obtain a degree from a "name" college or university rather than from a special program for the same reasons stated above.

On a more speculative level, it is also possible that the negative social experiences these students had in high school made them more determined to succeed during their postsecondary education, and better able to detect and avoid the pitfalls associated with their previous mainstreaming.

The findings from this research suggest that deaf students, who enroll and remain in a regular postsecondary institution, are able to make the transition from high school to college much as other students do.

> I talked with them at the beginning of a semester. And I'd say I had a notetaker and I might misunderstand something and I might have to ask a question. .... for the most part, they were very supportive. They understood what I wanted. And they encouraged me. In the

> beginning, I'm sure they probably thought, 'Okay, he's an average student.' But I felt good and by the end of the year, I was the best student in the class. They never had a deaf student before so it was hard. But later on, they needed to expect more from me than everybody else because I was one of the best students.
>
> Fall of my freshman year went pretty smoothly, it wasn't a very hard transition. I don't know why, but it wasn't. It wasn't that difficult for me.

While many of the students said they did not have a problem in making the transition from high school to college, others needed to develop appropriate coping strategies. For some students, this included learning to accept the fact that, while they might have been outstanding in high school with straight A's, they were now "just another student" and perhaps, even, an average student. By the sophomore year, these students had made the necessary adjustments to college, learned how to study, were using support services that they might not have taken advantage of in their freshman year, and were participating in the life of the college.

> Not any more than anyone else, I still feel uncomfortable getting a notetaker. But I have one person in my nursing classes who's wonderful. She takes notes in all of my classes, and she's been my saving grace. And, in terms of getting adjusted, it was just like everyone else, I think.
>
> In my first two years, it was very hard for me to maintain the levels that I was used to in high school. I was so used to making straight A's. Now I was in the middle instead of being at the top and I had a hard time adjusting. I made A's and B's, a mixture. But now that I'm in my third year I'm getting the hang of it and I'm getting back to straight A's. .... don't be afraid to ask for help. Everyone has the same frustrations, the same problems.

These students appear to have a strong internal locus of control. When they faced insensitive instructors, problems with obtaining support services, and coping generally with the environment as a deaf student in a "hearing" institution, they assumed responsibility for resolving problems. It is possible that deaf students cited in the literature (Foster & Brown 1986; Murphy & Newlon, 1987) as being isolated from their hearing peers and unable to cope in a regular college or university, tend to have an external locus of control which distinguishes them from the students who remain and succeed in regular colleges. However, for now at least, the influence of locus of control among deaf students on successful mainstreaming at the college level remains hypothetical.

The students' satisfaction with their decision to enroll and persist in a regular college or university may be rooted in their ability and willingness to take personal responsibility in developing friendships among their hearing peers, and in resolving problems as they arise throughout their four years of undergraduate studies. If this is so, such traits may well remain of value to them throughout their entire lives.

Experiences and Adaptive Strategies in College

Contrary to the researcher's expectation that some, if not most, deaf students would feel isolated and left out of the social mainstream of college life, these students are enjoying their present college experiences. In view of the literature (Brown & Foster, 1989; DeCaro & Foster, 1992; Farrugia & Austin, 1980; Foster &

Elliot, 1986, 1987; Murphy & Newlon, 1987; Saur, Layne & Hurley, 1981; Saur, Layne, Hurley, & Opton, 1986; Walter, Foster & Elliot, 1987), it was surprising to find the degree of participation in extracurricular activities and the range of activities in which these students are involved. Furthermore, while participating in extracurricular activities, these students still managed to keep in good academic standing by maintaining a B average. Their academic success can probably be attributed in part to the fact that they have developed good study habits and were well prepared for postsecondary work. They accepted the responsibility for their academic success or failure. They also recognized the importance of support services to their academic success and did not accept the failure of support services to provide them with what they needed.

> I think now I've learned different ways of studying. I've learned how to be more efficient, more productive. And I've learned that there's some classes that you have to study differently .... some classes you have to do all the readings for, and there are other classes where you don't have to. You can get by without doing all the reading, just picking out the most important things to read that will help you the most. I've learned how to be more efficient, more productive.
>
> I feel like it's improved because I know what to expect from my classes and I know how to organize my school work. When I have a notetaker, I can't study from a notetaker's notes. I have to re-write the notes myself. And that helps .... it can be a little bit of a hassle.
>
> Last semester I needed to have a tutor for one of my classes because I had no interpreter. .... but after that, because I couldn't get the interpreter for my section at night, I just decided it would be better to have the one-on-one tutor anyway. And then I saw the tutor that I used from last semester last week and I said 'I'm lost with this other tutor.' It really helps to be one-on-one.

The academic characteristics of these students are extraordinary, relative to standardized achievement norms for deaf students nationally (Allen, 1994). However, the students themselves do not seem to see anything out of the ordinary in their being enrolled and faring so well in a regular four-year postsecondary institution. Perhaps this reflects their mainstreaming in high school; these were reported as normal high school experiences, perceived as substantially similar to what hearing students experienced.

No doubt, aided by their accumulated history of mainstreaming, they have come to accept being mainstreamed with hearing students as a normal part of their lives. They do not identify themselves with deaf people as a community or have the pressing need to interact with other deaf students. They are comfortable with themselves as deaf people in a hearing world. This does not imply that they do not have deaf friends, or avoid contact with other deaf students. It simply means that their deafness is a normal part of themselves, one they have become comfortable with, and, while causing some problems, it is not a major barrier to their obtaining an education in a regular postsecondary institution.

> I have a more active life here than in high school. I am on the _______ varsity swimming team, I have a hearing boy friend, I also have deaf friends in the community, I really enjoy my life here. The swim team members have been great and they always are so supportive of me. I never feel left out of things here. I participate in class a lot now, more than I did in high school. Like the other day I was in Expository Writing class and this person was talking

> about something and I disagreed and he looked at me like, 'What? You challenged me??' and I said, 'Yes, I did.'

They participate in some sort of extracurricular activity in college, and many appear to be more active in college than they were in high school. They do not see their participation in these activities as anything out of the ordinary. For example, one student who has a 93 dB hearing loss and wears two hearing aids plays the violin in a strolling music group. She sees her musical activities just as something she has done since early childhood and not as something special. Another student with an 89 dB hearing loss is on her college downhill ski team, plays on the women's lacrosse team, and is also on the school's track team. Like other deaf students she sees these activities as just something she enjoys as part of her life. Other activities the students were involved in ranged from leadership positions in college organizations, membership on the debating team, writing and editing for their college newspaper, and coaching a swim team for disadvantaged children.

> I never really considered myself a leader until I was in college and people started wanting me to be their leader and asking me to be presidents of clubs and looking up to me and looking to me for answers and advice. And that really surprised me, because I grew up, like I said, I grew up with very low self-esteem. And I worked so hard to be as good as everyone else. And all of a sudden people are looking up to me. And that is a very strange experience.

These students have developed strategies which have enabled them to participate fully in these extracurricular activities. Some deaf students just accept the fact that they will not hear something and take it in stride. For example, some deaf students who play football (four in this case) frequently commit offsides, but they know that is just something that is going to happen and it doesn't change the way they play the game.

In developing strategies in academic areas, students seem to regard what they do as a normal part of their lives. If they have a problem with an insensitive instructor, they will resolve the problem themselves. For example, they will confront the instructor in a cooperative manner and try and work out a joint solution to the problem. If this strategy does not work, they will back off and take another course of action such as taking a different class. They recognize that there will always be problems associated with their deafness no matter what they do. They have learned to accept this as part of their lives and developed strategies to help them with these problems as they arise.

While most observers would view these students as high academic achievers, as stated earlier, these students view themselves as normal college students who are required to meet the requirements of their college like any other students. This sense of normalcy is one of the students' characteristics that was found throughout the interviews. Their responses played down their being special in any way; they said they were just like any other student at their college.

It was also found that some students do not want any attention directed at them that will make them stand out as different. For example, several deaf students indicated they did not use an interpreter in the classroom because they thought this would identify them as being different from their classmates.

Regardless of whether they use interpreters and other support services, the students are not preoccupied with their deafness. In fact, they go about their daily activities like the rest of the students. If one overheard their conversations, more likely than not they would be talking about some social event, their girl or boy friend, a tough course they were taking or plans for the weekend. It would be most unlikely that their conversations would be related to their deafness, deaf culture, or problems they are having as a deaf student in a hearing environment.

Quality and Adequacy of Support Services: Students' and Service Providers' Perspectives

It would be nice if deaf students enrolling in a regular college or university could find all the support services they needed in place and waiting for them. Regrettably, recent laws and regulations notwithstanding, this is far from true.

Several facts regarding support services have came to light from these findings. *First*, deaf students enrolling in regular colleges and universities are often not aware of the differences in the need for services between the high school and college environments. Whereas in high school they may have been in courses with a single required textbook and able to obtain their notes from the blackboard or a friend, they may now be in a lecture hall with 200 or 300 other students and a professor whose lectures do not parallel a particular textbook and who may not use a blackboard. Often they cannot sit next to someone they know from whom they can borrow notes. Furthermore, they probably have not only multiple textbooks, but required readings as well in order to satisfy course requirements. These students enter this environment without really understanding the need for support services, how to obtain them, or how to utilize them to their advantage.

Some students reported their regret at not making use of the support services and technologies that were available to them. Some speculated that they would have done better had they used an oral interpreter but, because they were not accustomed to using one, did not take advantage of the service. Others in their junior or senior year, who had only recently begun to use support services, looked back with regret that they had not taken advantage of these services earlier in their college career.

> And in my sophomore year I decided that I would give it a try. And I did and it worked well. And now I use the notetaking service. When I first got here, I wouldn't use the support services and now I do. The second thing is that when I got here, I had some trouble making friends because people had trouble understanding what I said. I made friends, but it was more difficult. And, especially I had problems meeting women, meeting girls. But, but, you know, as my speech has gotten better, I've had less problem with that, too.

It is obvious that many deaf students entering regular colleges are not adequately equipped with information that would enable them to understand the need for, how to obtain, and how to use support services.

Second, deaf students may enroll in a regular college or university after inquiring about one or more support services, only to find after being assured that these would be provided and beginning classes, that these services were not in place. Administrators may not be aware of the difficulty or the cost of obtaining the needed support services. They may assume that, if a deaf student needs an interpreter, the college can simply call a local interpreting referral service and obtain one on short notice. They may not be aware of a shortage of trained interpreters in their area, or the cost of these services. Administrators may also assume that any hearing student with a satisfactory academic record can provide notes for the deaf student on a voluntary basis. They are not aware that a voluntary notetaker is not always a satisfactory source of notes for a deaf student. Other problems in providing support services may arise because administrators have insufficient information about the special needs of deaf students, or the resources required to meet these needs.

Third, deaf students are often unaware that colleges, unlike high schools, do not have the responsibility to identify the students with disabilities. Deaf students in regular colleges must take the initiative to make their needs known to the appropriate persons. Often, without giving it further thought, students may expect their college to automatically provide interpreters for their classes. When they discover this does not happen, they blame the college for not meeting their needs. For example, they may wait until the day before classes begin to inform a service provider that they need an interpreter and notetaker. Requests often cannot be met on such short notice and the student is left with the feeling that the college is not attempting to meet his or her needs.

On the other hand, some students have also reported that they personally had to obtain an interpreter for their class, or other special services. This has happened either because a service provider did not follow through on a promise to obtain the needed service, or did not know how to obtain it. Taking responsibility for obtaining interpreters puts an unreasonable burden on students who are already under considerable pressure from coursework, and forces the student to assume what should be a staff role.

> When I first came here, I think they had a lot to learn because ____ was here and he was trying and trying and trying, but he had a lot of people who were fighting him. And most of the time I got whatever I needed. But he had a lot of trouble getting it.
>
> But I asked if she found interpreters for my two classes. And she was positive. She said, 'Oh, we found one. We're waiting for the other one.' Okay. So, the first day of class, I go to my three-hour graphics arts class. No interpreter. I'm there three hours, nothing. So I go to the Student Life Office and I said, where were my interpreters? .... 'Oh, no. We can't find an interpreter for that class.' I said, 'Well, you know, are you going to find one?' 'No, no, no, no.' 'You didn't even call me and tell me!' And it was that night. She said, 'Well-l-l .... I don't think we're going to find one. Maybe, maybe but she won't be here the first night.' So that night I didn't go to the night class.

The findings also indicated that the students often had to take on the responsibility for finding their own interpreters, or waiting an unreasonable time for the service providers to find an interpreter for their classes:

> It's been a pain in the butt. I have to plan my schedule. Then I have to call and inform the Massachussets Commission for the Deaf and Hard of Hearing (MCDHH) or MRC (Massachussets Rehabilitation Commission). I don't count on the administration to do that here. MCDHH says I should call MRC, but MRC tells me I should call MCDHH. So I get a different story. So I wind up calling MCDHH and giving them the schedule, but I can't always trust them to get it done either, so I also wind up calling interpreters on an individual

> basis and I ask them, 'Do you want to interpret for me?' So I've spent a lot of time with that and, like, during the year while I'm studying I'm also doing that at the same time.
>
> I'm the student and I can't make all the phone calls to make the arrangements. It was really their job in some ways, but I did learn more because I did that. I helped arrange some of the services for myself.

Students also reported that instructors were often insensitive to their needs and sometimes did not want to bother to make any special accommodations for the deaf student, or even in some cases made it clear that they did not want a deaf student in their class.

> I had a professor last semester who I couldn't hear at all and I asked him to wear a microphone that connects to mine and he wouldn't wear it. .... So I had to copy notes from a friend of mine who was taking the class all semester. But he (the professor) wouldn't wear a microphone. He wore hearing aids himself, and I was surprised that he wouldn't do that.
>
> Oh, there's a class that I'm taking right now. And the teacher doesn't use the book at all. Everything is from her own notes, and everything on the test has to be in her words and very often I don't exactly understand what her words mean. .... They refuse to give me their notes. They think it's not fair to the other students. They think the other students would complain that it wasn't fair. That's the reason they've given.

In some cases, this insensitivity on the part of their instructors has caused deaf students to drop classes or rearrange their schedule. Dependent on speechreading for communication with her instructors, one student said:

> There have been times when the professor has said, 'I'm not going to look at you.' They've said, 'Please don't come to this class. I don't have time to look at you.' So I said, 'Fine,' and I walked out and got a different class instead. It wasn't worth the trouble of battling with the professor all semester.

On the other hand, as one student said when asked if her instructors were sensitive to her needs: "that's a human condition, so it varies from person to person." This is very true, numerous students reporting that their instructors were sensitive and understanding:

> But I think all, I think because I'm at a small, Catholic college, and my classes are very small, all my professors know about my hearing loss and all of them are aware. So they know how important it is for them to look at me and for me to look at them for speechreading. I guess because they're standing near me, it's almost like they serve as an oral interpreter for me, in a way.

Fourth, service providers are trying to do their job under very difficult circumstances. They may be aware of the regulatory requirements for providing support services to deaf students, but the college's ability to comply may be beyond their control. For example, if the college or university is located in a rural area where no interpreters are available, there may be little the service provider can do. Also, even in urban areas, they may be faced with a situation in which the demand exceeds the supply.

Fifth, there can be conflicting views on the part of a student and a service provider on the quality of services being provided. Students who have eventually obtained a needed service may have had to wait indefinitely before something was done. Some students complained that they did not have an interpreter in class for several days, or even weeks, at the beginning of the semester. Some also complained about the skill of an interpreter, indicating it was not adequate to meet the interpreting requirements of the course. For example, some students indicated that their interpreters did not have sufficient knowledge of the subject matter being presented to be able to interpret it intelligibly. Some students reported they had to wait a long period of time before their residence rooms were equipped with needed equipment such as flashing door signals.

> Well .... interpreters, they're skilled .... yeah, except maybe one of them. Probably need more practice, but I didn't want to say anything because another one would be hard to find.
>
> I did have problems last year, last semester. They couldn't find an interpreter for me. I needed an interpreter for these two classes. And then a week before school started, I called her just to catch up and see if it was all set and she said, 'No.' I said, 'What?? I let you know a month ago that I needed an interpreter for my classes!' 'Well, I'm sorry.' And I'm like, 'What's going on here?' No one could find an interpreter, so I asked a friend of mine who was not an interpreter, but she knows sign. She was not great, but what could I do? I needed someone to help.

On the other hand, service providers for these same students often stated that these students did not inform them of their needs until the last minute, thus making it very difficult to meet these needs until several days or even weeks had passed.

> They can't come into this office the day before an event and say, 'I want an interpreter,' and expect to get one. I mean, they need to know that their responsibility .... in order to make us help them, includes, most importantly, letting us know what their schedules are.

While students may think it was the service providers' responsibility to take care of all their special needs, their service providers might describe these students as being immature and overly dependent, stating that the students wanted the service providers to take on the role of their parents and resolve all of their problems for them.

> .... when we have a deaf student who really is reluctant to accept suggestions for support, especially if they're not doing well in classes, if their grades are poor, and they're really reluctant to be identified as deaf or be different from their peers. That tends to be a problem, but the older the student becomes, the less of a problem. It's especially with freshmen and sophomores. They're worst in that area. Juniors and seniors know by now, 'Okay, this is what I need to get through school. I just have to accept my deafness and work with it to get me through school.'
>
> Some of the students expect me to just take charge of everything, but I don't do that. I figure there has to be a two-way learning experience. They can't expect me to be mom and take them by the hand. I expect them to be assertive in their role here as a student. .... So they really need to figure it out for themselves. I make the suggestion: 'This is what we have. This is what is recommended for you. You decide what you want. If, as you go along, you find out it's not working, let me know, and we'll sit down and together come up with a solution.' They do have a responsibility. I am not going to do it all for them.

> Most of them are very cooperative. It's particularly difficult for first-year undergraduates who have just left home. They may have had all their services provided by their families and don't know how to advocate for themselves. And don't know how to take the responsibility for getting their needs met. They start out by treating us as their parents. We try to tell them how they can be more effective by establishing relationships with their faculty members too, so that if things aren't working out well, then they can handle it.

It is evident that there are some conflicting views on both sides regarding the quality and adequacy of support services. In my interviews with a service provider in one large university, I was told that there was no problem in obtaining interpreters. All he/she had to do was to call the agency in the area and a certified interpreter would be provided. Interviewing a student in the same university later in the day, I was told that it was difficult to find interpreters and that some of the student's interpreters were very poor in their skills. In this instance, a student and a service provider were seeing the situation from two different perspectives. However, other students reported being satisfied with the services they were receiving. They had no problems obtaining interpreters and their notetakers were more than satisfactory.

It is clear that circumstances vary from campus to campus. A deaf student has no way of really knowing if a particular college or university that he/she may be considering can provide the support services he/she may need. It is suggested that students interview the service providers and, perhaps, another deaf student before choosing a college. The colleges and universities may say they will provide the necessary support services but this cannot be taken for granted. Some institutions are doing a better job than others; some are limited in what they can provide by budget constraints and by limited resources in their area.

> Q: You mean the interpreters don't find another one to cover for them?
> A: Who are they going to find? There is no one else. The other interpreters all have students that they're working with, so are they going to leave their students?

> It's very difficult in this area. As you know, as you move further north, there are fewer and fewer interpreters, and it becomes difficult sometimes for the scheduling. But, yes, the University provides sign interpreters.

> There is a shortage of interpreters in ________ County and because of the lack of a large pool of interpreters, it is difficult to provide interpreters for the students. Right now we have only one student who needs a sign language interpreter; however, if we had another student enrolled who also needed a sign language interpreter I really don't know where we would find one. We would be stuck, and although we would love to have more deaf students enrolled in the ______ we just cannot find interpreters to support them.

It also became apparent that some service providers are not aware of all the resources that are available to provide services for deaf students. This was made clear in the fact that many service providers had never heard of the real-time speech to text steno/computer services now being used with deaf students in an increasing number of colleges and universities. At the same time, credit must be given to some service providers who are very creative in meeting the needs of deaf students in their institutions. For example, one who bought a used laptop computer and hired a graduate student to sit next to the deaf student; this was a substitute for the more expensive real-time speech to text equipment.

In general, there is cooperation between the service providers and the students. Often the students understand the difficulty the service providers have in obtaining the service they need. Most service providers say they are trying their very best to meet the students' needs and, at the same time, meet their numerous other responsibilities. In the absence of standards of some kind, there is really no clear picture of the quality of services for deaf students in regular colleges and universities. However, it is clear that they can vary from excellent to unacceptable. Deaf students, planning to enroll in a regular college or university, need to carefully investigate the services they can expect, as well as the quality thereof. In turn, the student should inform the service provider of specific needs for services so there can be mutual understanding and cooperation.

RECOMMENDATIONS AND CONCLUSIONS

Recommendations

Implementation

It became clear, from a review of the literature, that there is relatively little published information available about the educational backgrounds and experiences of deaf students enrolled in regular four-year colleges and universities. What information is available is outdated, related to mainstreaming in the context of special programs, or, in many cases, more applicable to students who are hard of hearing rather than deaf. Deaf students, who are in high school and beginning to consider their options for postsecondary education, would benefit from such information. This information would also be useful to these students' parents, counselors and teachers.

It has become obvious from this study that deaf students considering postsecondary education often fail to anticipate important differences between high school and college, and what these differences mean in terms of support services. For example, in high school, students may not need a notetaker because of small classes and the ability to copy notes from the blackboard. In college, however, they may find themselves in a lecture hall with 200 or 300 other students and an instructor who does not use the blackboard but lectures from his/her own notes.

Deaf students also need to know what to ask about the availability of support services, and their responsibilities for effectively utilizing the services. Deaf students and their parents also need to clearly understand their rights and responsibilities, and the rights and responsibilities of their college, under Section 504 and the Americans with Disabilities Act (ADA). Colleges and universities, in turn, need to understand their respective rights and responsibilities under the same two laws; likewise they need to inform prospective deaf students of the special services they are prepared to provide them.

In addition, deaf students and their parents are often unaware that other deaf students, who are enrolled in or have graduated from regular four-year colleges and universities, have already faced similar problems while in these institutions. Many have already developed adaptive strategies for handling these problems. Deaf students who are considering enrollment in regular four-year colleges and universities, along with their parents and their counselors, need to be aware of these students and their strategies. Successful deaf graduates of these postsecondary institutions can be instructive and serve as excellent role models.

This study has also made it obvious that key administrators, faculty, and staff are often not aware of the diversity among deaf students, and the differences in the kinds of support services they may need. Often, if a college has had, or presently has, a deaf student, it is assumed that all deaf students who wish to enroll in that institution will be similar and that a new deaf student will need the same services. Indeed, this may not be so. Service personnel also are often unaware of the resources in their geographical area, and unfamiliar with developing technologies, which could help meet the needs of these students. These personnel should be kept up-to-date through workshops, conferences, reference materials, and other resources.

Perhaps this primary research will provide a foundation for resolving some of the problems of providing support services to deaf students in regular four-year colleges and universities. It should be helpful as a resource in setting standards and improving specific services. For example, service providers and students should have a clear understanding of each other's responsibility in obtaining and providing the needed services.

Future Research

As indicated earlier, caution must be exercised in generalizing to a broader population from 33 deaf students in 18 colleges and universities. Nevertheless, this study did disclose more profoundly deaf students, with prenatal or early onset of deafness, enrolled in regular colleges and universities than I had expected to find. Under the present political and social conditions, it is likely that the number of deaf students attending regular four-year postsecondary institutions will continue to increase.

This study provided information about why some deaf students choose to attend a regular four-year college or university rather than a special program. It also provided insight into the students' characteristics and backgrounds that seem to be associated with their success in a regular four-year postsecondary institution. This study indicated that there were some characteristics of these students which can be associated with their success in regular postsecondary institutions. Two particular variables observed among many of the students in this study were: (a) strong and consistently high levels of motivation and (b) their acceptance of personal responsibility for success and failure; these suggest an internal locus of control.

A follow-up study would help to determine if one's internal/external locus of control is predictive of, and contributes to, success or failure of deaf students in regular four-year colleges and universities.

Because this study furnished no new information about the characteristics and backgrounds of deaf students who enroll in these colleges and universities and subsequently withdraw without obtaining a degree, further research is needed to distinguish between "successful completers" and their less successful counterparts. The quality and adequacy of support services should also be factored into this research.

A substantially larger study should be undertaken addressing these and other remaining questions and issues. A large stratified random sample of deaf students should be used to select the students for this study.

Deaf students who are enrolled in all college levels, not just in the sophomore year or above, should be included. Also, students who withdrew and/or transferred to special programs should be included.

A review of the literature has indicated that there is no accurate estimate of the number of deaf students enrolled full time in regular four-year colleges and universities. The available studies do not distinguish between two-year and four-year institutions, nor do they indicate the degree of hearing loss or age at onset among the students studied. There is a need for a larger study to derive a means of determining an accurate estimate of the number of deaf students who are enrolled full time in regular four-year colleges and universities. Degree of deafness and age at onset should be factored into this research.

Finally, it would be of great interest to conduct a follow up study of the 33 students who were interviewed for this effort, after they have completed their formal education and continued on in their personal lives and careers, to cast light on how their lives have been affected by their decision to attend a regular four-year college or university.

Conclusions

The purpose of this study was to provide background information and answer four questions about deaf students enrolled in regular four-year colleges and universities. It was recognized that a small sample would simply help to lay a foundation for future research. It is believed that this study has accomplished its purpose, and will not only lay a foundation for future research, but stand on its own as a valuable source of information about deaf students enrolled in regular four-year colleges and universities. This study has provided us with insights on a remarkable group of high academic achieving deaf students.

The 33 students interviewed for this study shared many similar characteristics that may be conducive to the success of all deaf students enrolled in regular four-year colleges or universities. Several, including motivation, goal orientation, and internal locus of control, warrant greater attention than has been given in the past. Others such as oral/aural communication, family variables, and prior mainstreaming experiences were predictable.

These students offer three primary reasons for their decision to attend a regular four-year postsecondary institution, rather than a special program. First, they have been mainstreamed all their lives. They feel comfortable in the hearing world and do not see themselves as belonging in a special program with a large group of deaf students. Second, they are very well prepared academically for postsecondary education, and feel they would not be academically challenged in a special program. Third, they feel that a degree from a "name" college or university will provide greater opportunities for graduate studies and future careers than a degree from a college with a special program.

The students' satisfaction with their decision to attend a regular four-year college or university can be attributed to their academic ability to make the transition from high school to college, their emerging friendships with hearing peers, and their development of adaptive strategies. Being content with the quality of, and the ability to utilize the available support services, adds to the students' satisfaction with their decision. Also, they have learned how to handle their own problems and take responsibility for resolving these problems when necessary.

They are motivated to participate in extracurricular activities, and to do well in their academic studies. They are proactive in integrating with their hearing peers and feel they are part of their institution.

The quality and adequacy of support services for these students varies from campus to campus, largely because of the unequal distribution of support personnel, such as interpreters, in different geographical areas. There is also no standard by which to measure the quality or adequacy of the services, and their service providers are often not aware of the resources or technical assistance that is available for deaf students in their area.

Although service providers often come to their position without any preparation, or the background to serve disabled students, they quickly learn on the job. They are often caught in the middle between wanting to provide the needed services, and being limited in doing so by the extent of their resources. It can be concluded that these people do make sincere efforts to meet the students' needs; when difficulties do arise, it is often because of problems beyond their control. Not all of the limitations come from the college or the service providers. The lack of cooperation on the part of some students can also cause problems in providing service.

This study has provided us with a picture of a small and selective group of deaf students who have been successfully mainstreamed in elementary and secondary school, and who continue to be successful in the mainstream of a regular four-year postsecondary environment. These students are very intelligent and mature, and comprise a special group of academically high achieving deaf students. While numerous factors beyond their personal control contribute to their success, the students' own efforts, persistence, and determination to do well may provide the main driving force behind their success.

References

Agar, M. H. (1980). The professional stranger: An informal introduction to ethnography. Orlando, FL: Academic Press.

Allen, T. E. (1994). Who are deaf and hard-of-hearing students leaving high school and entering postsecondary education? Unpublished manuscript, Gallaudet University, Center for Assessment and Demographic Studies.

Antia, S. D. (1982). Social interaction of partially mainstreamed hearing-impaired children. American Annals of the Deaf, 127 (1), 18-25.

Association for Handicapped Students Service Programs in Postsecondary Education. (1987). Disabled student enrollment survey. Columbus, OH: AHSSPPE.

Bigman, S. K. (1961). The deaf in American institutions of higher education. Personal and Guidance Journal, 39 (9), 743-746.

Bogdan, R., & Biklen, S. (1982). Qualitative research for education: An introduction to theory and methods. Boston: Allyn & Bacon.

Bogdan, J. P., & Taylor, S. J. (1975). Introduction to qualitative research methods: A phenomenological approach to the social sciences. New York: John Wiley & Sons.

Brown, P. M., & Foster, S. B. (1989). Integrating hearing and deaf students on a college campus: Success and barriers as perceived by hearing students. American Annals of the Deaf, 136, 21-27.

Chickering, A. W., & Chickering, J. N. (1978). Life-long learning by handicapped persons. In M. C. Reynolds (Ed.), Futures of education of exceptional students: Emerging structures (pp. 89-131). Reston, VA: Council of Exceptional Children.

DeCaro, P. M., & Foster, S. B. (1992). Interaction between deaf and hearing students in postsecondary educational settings. In S. B. Foster & G. G. Walter (Eds.), Deaf students in postsecondary education (pp. 118-146). London: Routledge.

Education for All Handicapped Children Act (PL 94-142), 20 U. S. C. 1401 et seq. (1975).

Farrugia, D., & Austin, G. (1980). A study of social emotional adjustment patterns of hearing-impaired students in different educational settings. American Annals of the Deaf, 125, 535-541.

Frankel, M., & Sonnenberg, W. (1978). Enrollment. In M. Frankel (Ed.), Projection of education statistics to 1986-87 (pp. 7-29). Washington, DC: National Center for Education Statistics.

Foster, S. B., & Elliot, L. (1986). Alternative in mainstreaming: A "range of options" model for the postsecondary hearing-impaired student. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Foster, S. B., & Elliot, L. (1987). Why students decide to attend NTID at RIT: An interview study with first year college students. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Gallaudet, E. M. (1893). The higher education of the deaf. Paper presented at Worlds Congress of Instructors of the Deaf. Chicago, IL.

Gardner, H. (1993). Multiple Intelligences: The theories in practice. New York: Basic Books.

Gjerdingen, D. B. (1977). What colleges and universities can deaf students successfully attend. Volta Review, 79, 112-113.

Green, D. (1990). High school employment in social context: Adolescents' perceptions of the role of part-time work. Adolescence, 25, 424-434.

Gresham, F. (1986). Strategies for enhancing the social outcomes of mainstreaming: A necessary ingredient for success. In Meisel, C. L. (Ed.), Mainstreaming handicapped children: Outcomes, controversies, and new directions (pp. 193-218). Hillsdale, NJ: Lawrence Erlbaum Association.

Hallahan, D. P., & Kauffman, J. M. (1978). Exceptional children: Introduction to special education. Englewood Cliffs, NJ: Prentice-Hall.

Hurwitz, T. A. (1983). Growing up in a mainstreamed education: Reflections of a deaf person. Deaf American, 35 (8), 15-18.

Hurwitz, T. A. (1991). Opportunities for postsecondary education for deaf students. In D. Hicks and E. Stuckless (Eds.), 1990 International Congress on Education of the Deaf: Proceeding II: Topical Addresses (pp. 71-76). Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Hurwitz, T. A. (1992). Postsecondary education and political activism. In S. B. Foster & G. G. Walter (Eds.), Deaf students in postsecondary education (pp. 168-181). London: Routledge.

Karchmer, M., & Trybus, R. (1977). Who are the deaf children in "mainstream" programs? (Series R, No. 4) Washington, DC: Gallaudet College, Office of Demographic Studies.

Kirk, A. S., & Gallaghan, J. J. (1981). Educating exceptional children. Boston: Houghton Mifflin.

Kluwin, T. N., & Stinson, M. S. (1993). Deaf students in local public high schools: Backgrounds, experience and outcomes. Springfield, IL: Charles H. Thomas.

Lane, H. S. (1976). The profoundly deaf: Has oral education succeeded? Volta Review, 78, 329-340.

Mandell, C. J., & Fiscus, E. (1981). Understanding exceptional people. New York: West.

Marshall, C., & Rossman, G. B. (1989). Designing qualitative research. Newark Park, CA: Sage.

Meadows, K. P. (1980). Deafness and child development. Berkeley: University of California Press.

Menchel, R. S. (1978). The role model project for disabled students. Unpublished manuscript, American Association for the Advancement of Science, Project on Handicapped in Science, Washington, DC.

Menchel, R. S. (1993). Hearing-impaired students in regular colleges and universities. Qualifying Paper, May 1993. Unpublished manuscript, Harvard University Graduate School of Education, Cambridge, MA.

Mishler, E. G. (1986). Research interviewing: Context and narrative. Cambridge, MA: Harvard University Press.

Moores, D. F., & Kluwin, T. N. (1986). Issues in school placement. In A. N. Schildroth & M. A. Karchmer (Eds.), Deaf children in America (pp. 105-123). Boston: College Hill Press.

Murphy, J. S., & Newlon, B. J. (1987). Loneliness and the mainstreamed hearing impaired college student. American Annals of the Deaf, 132, 21-25.

National Center on Educational Statistics. (1994). Deaf and hard of hearing students in postsecondary education. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. NCES 94-394.

Northcott, W. H. (1971). The integration of young deaf children into ordinary educational programs. Volta Review, 38, 29-32.

Office of Civil Rights. (1989). Section 504 of the rehabilitation act of 1973 fact sheet. Washington, DC: U.S. Department of Health, Education and Welfare.

Opperman, W. (1993). New demographics offer more opportunities. In D. Ellen (Ed.), Connections (p. 6). Brookline, MA: Lane & Lawrence.

Patton, M. Q. (1978). Utilizing focused evaluation. Beverly Hills, CA: Sage.

Patton, M. Q. (1990). Qualitative evaluation and research methods. Newbury Park, CA: Sage.

Rawlings, B. W., Karchmer, M. A., DeCaro, J. J., & Allen, T. E. (Eds.), (1988). College and career programs for deaf students. Washington, DC: Gallaudet University.

Rawlings, B. W., Karchmer, M. A., DeCaro, J. J., & Allen, T. E. (Eds.), (1991). College and career programs for deaf students. Washington, DC: Gallaudet University.

Rawlings, B. W., & King, S. J. (1986). Postsecondary education opportunities for deaf students. In A. N. Schildroth & M. A. Karchmer (Eds.), Deaf children in America (pp. 231-257). Boston: College Hill Press.

Redden, M. R. (1979). Disabled students in higher education. Unpublished manuscript, American Association for the Advancement of Science, Project on Handicapped in Science, Washington, DC.

Rehabilitation Act of 1973 § 504 (PL 93-142), 29 U. S. C. 794 et seq. (1973).

Saur, R., Layne, C., & Hurley, E. (1981). Naturalistic research on mainstreaming at the National Technical Institute for the Deaf (in-house report). Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Saur, R., Layne, C., Hurley, E., & Opton, K. (1986). Dimensions of mainstreaming. American Annals of the Deaf, 131, 325-329.

Schroedel, J. G., & Watson, D. (1991). Enhancing opportunities in postsecondary education for deaf students. Little Rock, AK: University of Arkansas Rehabilitation Research and Training Center on Deafness and Hearing Impairment.

Seidman, I. E. (1991). Interviewing as qualitative research: A guide for researchers in education and the social sciences. New York: Teachers College Press.

Spradley, J. P. (1979). The ethnographic interview. New York: Holt, Rinehard and Winston.

Spradley, J. P. (1980). Participant observation. New York: Holt, Rinehard and Winston.

Strong, M., Charlson, E., & Gold, R. (1987). Integration and segregation in mainstreaming programs for children and adolescents with hearing impairments. The Exceptional Child, 34, 181-195.

Stuckless, E. R. (1987). Terminology. In J. V. Van Cleve (Ed.), Gallaudet Encyclopedia of deaf people and deafness (pp. 368-369). New York: McGraw-Hill.

Stuckless, E. R., & Frisina, R. D. (1976). Postsecondary education for the deaf. Unpublished manuscript, Rochester Institute of Technology, National Technical Institute for the Deaf, Rochester, NY.

Stuckless, R., Avery, J., & Hurwitz, A. T. (1989). Educational interpreting for deaf students. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Tinto, B. (1987). Leaving college. Chicago, IL: University of Chicago Press.

Walter, G. G. (1989). Adherence of postsecondary programs to the CEASD principles basic to the establishment and operation of postsecondary education for deaf students. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Walter, G. G. (1992). Characteristics of programs serving deaf persons. In S. B. Foster & G. G. Walter (Eds.), Deaf students in postsecondary education (pp. 24-42). London: Routledge.

Walter, G. G. Foster, S. B., & Elliot, L. (1987). Attrition and accommodation of hearing-impaired college students in the U. S. Rochester, NY: Rochester Institute of Technology, National Technical Institute for the Deaf.

Winzer, M. A. (1993). A history of special education: From isolation to inclusion. Washington, DC: Gallaudet University Press.

Appendix A

Interview Guide for Students

NOTE: This is not a questionnaire, but a guide for the interviewer to use during the interview to ensure uniformity among the interviews and coverage of all areas for each participant.

Interview Protocol

- Set up tape recorder and have all necessary forms ready for students prior to their arrival.
- Welcome students and thank them for giving their time. If possible, meet students in lounge or coffee house prior to interview.
- Introduce self and interpreter.
- Allow the students to read the consent form, if not already having done so. Ask the student if they understand the form, if there are any questions, and if they have read and understood the Principles.
- Ask the students to sign the consent form and fill out the demographic data sheet.

Type of Interview

The interview will be open ended and informal, allowing the participants to describe their experience, background, perspectives, and thoughts without interruption. The role of the interviewer is to listen, ask for clarification where necessary, and check the guide to see that all the necessary information is obtained. Similar topics should be covered in the same order and format, so that coding and pattern recognition can be achieved. Questions will be paraphrased if the students do not understand the question as phrased, but the content will not change.

Introducing Self

It will be important to develop rapport with the students being interviewed for this study. Spradley (1979) defines rapport as:

> .... a harmonious relationship between ethnographer and informant. It means that a basic sense of trust has developed that allows for the free flow of information. Both the ethnographer and the informant have positive feelings about the interview, perhaps even enjoy them. However, rapport does not mean deep friendship or profound intimacy between two people. .... Rapport can exist in the absence of fondness and affection (p. 78).

My own deafness may be useful in developing rapport with deaf students, yet I am aware that my background, experience, views, and opinions may be different from those of the deaf people I am interviewing. In introducing myself, I will explain to the students that I have been profoundly deaf since age six and, like them, attended regular colleges and universities for my undergraduate and graduate studies. I will tell the students that I am not familiar with the present environment, which is perhaps different from when I was an undergraduate, and explain to them that I am not there to collect data about deaf students in regular colleges but to learn from them about their own experiences. This introduction will be made in an informal setting. I plan to meet the students in the lounge, or some other informal place, prior to the interview and get to know them on an informal basis. During my pilot study (Menchel, 1993) I was able to meet the students for lunch, coffee, or dinner prior to doing the interviews, which helped the students to be comfortable in sharing their experiences with me, and helped me to develop rapport with them.

During an interview, I may restate what was said using the same terms that the student used. This will prompt students to speak in their own everyday language which will help avoid reinterpreting and will later help the transcriber understand what was being said. An example is given here:

Q: When you talked with hearing people they understood you?

A: Not really.

Q: **Not really**, oh, what did you do if they did not really understand you?

A: Repeat.

Q: **Repeat**? You wouldn't write it down?

A: Nope, I would not write it down, I would repeat until they understood.

Q: Oh you **didn't need to write it down**, Okay. You understood them?

A: Yep, if I didn't understand them, I asked them to repeat.

First and Second Research Questions

- Why do some deaf students decide to attend a regular college or university instead of a special program?
- After a year or more of enrollment in a regular college or university, what reasons do these students give for being satisfied or dissatisfied with their decision?

Note: Allow the student to talk without interruption, but ask questions as needed, for clarification and assurance that all aspects of the high school experience are covered.

Main Topics to be Covered

- Scan the demographic data sheet and check to be sure that all information has been provided. Use the demographic data sheet to open the interview by asking the students if they were mainstreamed in both elementary and secondary school.
- Continue by asking the students what year they are in college (i.e., sophomore, junior, or senior) and ask them to reflect on their high school experience.
- During this part of the interview, ask the students to reflect on friends that they had in high school, parental and other support, participation in academic and extracurricular activities, social life, best friends in school, the kind of support services they had, if any, and other related topics that are typical of the high school experience.

Other Aspects to be Covered

- Self-confidence, how developed, over time or always had it.
- Deafness as a motivator, compare with peers, prove self.
- Goal setting, type of personality now and in high school.
- Reading habits, enjoyment of reading.
- Communication experience, feelings about high school, feeling of isolation or inclusion, meaning of success to them, best and worst thing they remember about their high school experience, and other topics.
- Decision to attend a regular college, what was involved in making decision, aware of the special programs such as those offered by Gallaudet, NTID, CSUN, etc.
- Factors in selecting the college they are attending, importance of support services in making decision, experience visiting other colleges and universities, feeling of being welcomed, included, provided with support services, right program.
- Satisfaction or dissatisfaction with decision they have made to attend a regular college.
- Given the opportunity to do it all over again, would they do the same thing or something different.

Summary: Let the students reflect on the whole experience of the transition from secondary school to their present environment, how they feel now, and how they felt in the first year, and what they learned from their experience.

Third Research Question

- How do these students describe their college experience in terms of integrating with hearing peers and in their academic and social participation, and what, if any, adaptive strategies have they developed?

Main Topics to be Covered

- Ask students to describe interaction with peers, participation in academic and extracurricular activities, sports, overall satisfaction, friends made, how made, social life.
- Ask students to share their experience in postsecondary institutions to date, and how they felt on arriving the first year.
- Ask what they learned from the first year that has been helpful in later years, and what would they do differently looking back on it now.
- Ask about developing strategies, length of time it took to develop strategies, developed by self or with help from others, use of service providers to develop?
- Ask how students feel about their participation in informal give-and-take in classroom, participation in extracurricular activities, boy/girl-friends, social life, participation in sports.

Other Aspects to be Covered

- Progress now and in first year.
- Perceptions of inclusion or isolation, participation or non-participation, friendship or loneliness, acceptance or rejection.
- Sensitivity of professors, peers, and administrators.
- Feelings of optimism or pessimism, reason for feelings.
- Persistence vs. stubbornness.
- Impressions of success, failure, happiness.

Summary: Let the students reflect on their overall experience at this time in their academic career, and on how things are going from their own perspective; describe the enjoyment and frustrations they have had with peers, professors, administrators, and their academic studies; articulate kinds of feelings they have had and the goals they seek after undergraduate studies; list strategies they developed to succeed in this environment. Clarification of some answers from the first research question and additional detail may be asked here as well.

Fourth Research Question

- How do their descriptions of the quality and adequacy of support services differ from the descriptions provided by the service providers in their college?

Main Topics to be Covered

- What is the student's perspective of the quantity and adequacy of his/her support services?
- What are the student's feelings of satisfaction or dissatisfaction regarding the support services?
- How did the students learn about the support services and how do they obtain services they need?
- What services do the students use and who is responsible for obtaining services?
- How do the students compare the services they are receiving with what they had, if any, in high school?
- What is the student's perspective of the sensitivity of instructors, administrators, and the institution regarding providing and using support services?
- If they had the opportunity, how would they improve the services?
- What is their perspective of the perfect setting at a regular college for a deaf student?

Summary: Participants should describe how they feel about the support services they have been receiving and any problems they have had; discuss strategies they used to overcome any problems that they may have encountered in obtaining or using services; give an over all view of the support services provided, or not provided, by their institution.

Appendix B

Interview Guide for Service Providers

NOTE: This is not a questionnaire, but a guide for the interviewer to use during the interview so there will be uniformity among all of the interviews and coverage of all areas for each participant.

Interviewing Protocol

- Introduce self and interpreter.
- Thank subjects for time they are giving me.
- Ask for permission to set up tape recorder and plug in.
- Create a comfortable informal setting.

Type of Interview

While it will be on a professional level, the interview should be informal and open ended allowing the participant to describe his/her experience in providing services to deaf students. At the same time, the interview should be such that the service providers will be able to comfortably, openly and honestly describe their ability to provide these services. The role of the interviewer is to listen and ask for clarification where necessary, and to check that all the necessary information is obtained. In order to obtain the data needed for coding, and to achieve some type of pattern recognition, each interview should cover similar topics in the same order and format.

Introducing Self

I will introduce myself and explain my background. I will explain I am profoundly deaf and that although I can speech-read, I may not always be able to understand them; therefore, I will use an interpreter to facilitate the interview process. I will tell them that I have attended regular colleges over a span of 30 years or more, and have experienced the changes that have taken place over the years. At the same time, I will tell them that I am unaware of the situation at their institution and want to learn from them how they provide services to deaf students and how they perceive the reception of the students to the services.

First Objective

Obtain data about the service provider's background, how he/she came to their present responsibility, and how long he/she has been in their current position. This data will provide information about their backgrounds and perspectives as service providers.

Education and Previous Work Experience

- Provider's degree and major, work experience prior to entering service provider position, reason for taking position, years as service provider.
- Presence of deaf or disabled people in family, or as friends outside of students.
- First experience with a deaf student.
- Present experience with deaf students.
- Enjoyment /disappointments with job.
- Personal satisfaction and rewards with job.

Second Objective

Identify the number and type of students that the service provider has to serve. Identify different types of students with disabilities that are at the institution and the type of services that have to be provided. Focus on services available for deaf students and the different types of services these students request. This will give an overview of the variety of services required and requested, and how these services are provided.

Overview of Office of Service Providers

- Number of students with disabilities the office serves, size of staff, training staff receives or special background required for position, different disabilities office serves, largest group of students with disabilities, institution's special equipment available to students with disabilities.
- Length of time office for disabled students has existed, reason for location of office.
- Degree of support from administrators.
- Expense and difficulty of providing service for small number of disabled students vs. a large number.

Focus on Deaf Students

- Number of deaf students served by office, method of contacting and identifying students with disabilities.
- Deaf students who do not require or want any service, not "identifying" themselves as "deaf."
- Kind of interpreters needed, ASL, Signed English (SEE), Cued Speech, Oral, other. Interpreters trained in Educational Interpreting or having certificate from Registry of Interpreters for the Deaf?
- Sign language usage by staff, Telephone Typewriter (TTY) in office, training for use of TTY, special services for deaf students, difficulty or ease of obtaining interpreters, types of interpreters used, presence of full-time interpreters on staff, ways deaf students use this office, normal process for requesting service, difference in processes for academic service and extracurricular activities.

Third Objective

Identify problems that the service providers might have providing services to deaf students. Identify the responsibilities of the students and the service providers. Determine difficulties, if any, and student cooperation with the office of service providers.

- Kinds of cooperation and difficulties the office has with deaf students, why cooperation or difficulties exist, special problems that might arise occasionally, repeated problems from year to year.
- Students' appreciation of support services, special consideration and cooperation between students and service providers.
- Variety of deaf students within the college student body, most difficult and easiest areas to provide services to deaf students.
- Support and sensitivity from administrators, instructors, or others in providing services for the deaf students.
- Strategies used by the office when interpreters cannot be provided, other services such as notetakers, copying, tutoring, and transcribing services for the deaf students, voluntary or paid.
- Funding from the state or federal government to support these students (i.e. VESID), whether all funding is provided by the institution, whether funding is a general budget item or a line item.

Other Areas of Responsibility of Service Providers

- Assistive devices in student housing, captioned films in classroom, assistive devices on campus, amplification devices in classrooms, cooperation with building administration for incorporation of signal lights, etc.
- Mediation between deaf students and others if necessary, provide counseling service, placement service.
- Other areas of responsibility the office has beyond providing support services for students.

Appendix C

Code Nbr. ____

Demographic Data

Personal Data – Self and Family

1. Name ____

Permanent Address

Address ____________________________ City ______________

State _____ Zip ________ Phone Number ____________ Voice ___ TTY ___ Both ___

School Address

Address ____________________________ City ______________

State _____ Zip ________ Phone Number ____________ Voice ___ TTY ___ Both ___

E-Mail Address ________________________

Sophomore ____ Junior ____ Senior ____

2. Place of Birth ______________________ Date of Birth ______________

3. When did you lose your hearing? (a) Born deaf ___ (b) Lost hearing at ________ (age)

4. What is your hearing loss? ________ dB, or how you would characterize your hearing loss? (mild, severe, profound, etc.) ______________

5. Do you consider yourself deaf, hard-of-hearing, or hearing-impaired?

Deaf ___ Hard-of-hearing ___ Hearing-impaired ___

6. Are your parents deaf or hearing?

Mother: ____ Deaf ____ Hearing Father: ____ Deaf ____ Hearing

7. Mother's occupation ______________ Father's occupation ______________

8. Did your parents go to college?

Mother ____ (Y/N) Father ____ (Y/N)

If your mother or father went to college what was the highest degree they earned?

Highest degree: Mother _____ Highest degree: Father _____

9. What is the estimated range of your family's income (combined income of Mother and Father)?

< $50,000 ____

Between $50,000 and $70,000 ____

$71,000 and $90,000 ____

$91,000 and $110,000 ____

$111,000 and $120,000 ____

$121,000 and $130,000 ____

$131,000 and $140,000 ____

$141,000 and $150,000 ____

> $150,000 ____

Past Education Information

10. Where did you go to elementary school? ____________________________

Mainstream? ____	School for the Deaf? ____	Name of School(s)
Grade Attended _____	Grade Attended _____	________________
Public? ____ Private? ____	Public? ____ Private? ____	________________

11. Where did you go to secondary school (high school)?

Mainstream? ____	School for the Deaf? ____	Name of School(s)
Grade Attended _____	Grade Attended _____	________________
Public? ____ Private? ____	Public? ____ Private? ____	________________

12. Did you have a resource room in elementary school? _____ Yes ____ No

Did you have a resource room in high school? _____ Yes ____ No

13. Did you graduate from high school? _____ Yes ____ No What year did you graduate? _______

14. What was your Grade Point Average in high school? ________ (GPA or A,B,C etc.)

15. What program were you enrolled in high school? ________________________

(College Preparation, General, Vocational)

16. Did you take the Scholastic Aptitude Test (SAT) for college admission? ____ Yes ___ No

If you took the SAT, what were your scores on the: Verbal _____ Math _____

17. How many colleges did you apply to? ____ How many accepted you? _____

18. What is your current major? ____

Communication

19. What is your main means of communication?

- ____ ASL
- ____ Signed English with no Voice
- ____ PSE with no Voice
- ____ Speech and Speechreading
- ____ Signed English with Voice
- ____ PSE with Voice
- ____ Finger Spelling
- ____ Writing
- ____ Other (describe) ______________________________

20. Of the above, have you always used this method of communication or did you recently begin using it?

______ Have always used this method of communication.

______ Recently began using it.

21. What are your career plans after you obtain your Bachelor degree?

____

____